US Army Corps
of Engineers ®
New England District

INDIVIDUAL PERMIT
WORK-START NOTIFICATION FORM
(Minimum Notice: Two weeks before work begins)

****
* MAIL TO: U.S. Army Corps of Engineers, New England District *
* Policy Analysis/Technical Support Branch *
* Regulatory Division *
* 696 Virginia Road *
* Concord, Massachusetts 01742-2751 *
****

Corps of Engineers **Permit No. NAE-2008-588** was issued to **CT DOT, P.O. Box 317546 2800 Berlin Turnpike, Newington, Connecticut 06131-7546**. This work is located in the Housatonic River and adjacent wetlands at the I-95 Bridge (Moses Wheeler Bridge (State Project No. 138-221)) in Milford and Stratford, Connecticut. The permit authorized the permittee to discharge dredged (dewatering within cofferdams) and fill materials below high tide line in the Housatonic River and in adjacent wetlands areas in association with replacement of the existing Moses Wheeler Bridge, and to reconstruct and maintain an existing State boat launch facility consisting of a concrete launch ramp with adjoining pile-suppported floating docks on the Housatonic River in Milford, Connecticut.

The people (e.g., contractor) listed below will do the work, and they understand the permit's conditions and limitations.

PLEASE PRINT OR TYPE

Name of Person/Firm: _____

_____

Business Address: _____

_____

Telephone Numbers: (___) _____ (___) _____

Proposed Work Dates: **Start:** _____ **Finish:** _____

Permittee/Agent Signature: _____ **Date:** _____

Printed Name: _____ **Title:** _____

Date Permit Issued: _____ **Date Permit Expires:** _____

****

FOR USE BY THE CORPS OF ENGINEERS

PM: Susan Lee **Submittals Required:** yes

Inspection Recommendation: yes

_____

US Army Corps
of Engineers ®
New England District

(Minimum Notice: Permittee must sign and return notification within one month of the completion of work.)

COMPLIANCE CERTIFICATION FORM

USACE Permit Number: NAE-2008-588

Name of Permittee: CT DOT

Permit Issuance Date: September 17, 2008

Please sign this certification and return it to the following address upon completion of the activity and any mitigation required by the permit. You must submit this after the mitigation is complete, but not the mitigation monitoring, which requires separate submittals.

****
* MAIL TO: U.S. Army Corps of Engineers, New England District *
* Policy Analysis/Technical Support Branch, ATTN: Marie Farese *
* Regulatory Division *
* 696 Virginia Road *
* Concord, Massachusetts 01742-2751 *
****

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit was completed in accordance with the terms and conditions of the above referenced permit, and any required mitigation was completed in accordance with the permit conditions.

_____ _____
Signature of Permittee Date

_____ _____
Printed Name Date of Work Completion

(____) _____ (____) _____
Telephone Number Telephone Number

US Army Corps of Engineers®
New England District

MITIGATION
WORK-START NOTIFICATION FORM

(Minimum Notice: Two weeks before mitigation work begins)

MAIL TO: U.S. Army Corps of Engineers, New England District
Policy Analysis/Technical Support Branch
Regulatory Division
696 Virginia Road
Concord, Massachusetts 01742-2751

Corps of Engineers **Permit No. NAE-2008-588** was issued to **CT DOT, P.O. Box 317546 2800 Berlin Turnpike, Newington, Connecticut 06131-7546**. The permit authorized work/discharge of dredged (dewatering within cofferdams) and fill/backfill materials below high tide line in approximately 1.30 acres (0.095 permanent, 1.2 temporary) of the Housatonic River and adjacent wetlands areas in association with replacement of the existing Moses Wheeler Bridge in Milford and Stratford, and in association with reconstruction of the State boat launch facility consisting of a concrete launch ramp with adjoining pile-supported floating docks on the Housatonic River in Milford, Connecticut.

The permit required compensatory mitigation. Onsite mitigation consists of excavation/grading below high tide line on the Milford and Stratford shoreline to create tidal marsh areas, and includes wetlands plantings, and monitoring and reporting. The mitigation areas total approximately 0.28 acres, and are located under the bridge on the shoreline areas on the Stratford (area 1) and Milford (area 2) sides of the Housatonic River.

Those listed below will perform the mitigation, including monitoring and remediation if required. They understand the requirements of the permit and the mitigation and monitoring plan.

PLEASE PRINT OR TYPE

	Environmental Consultant/Scientist	**Mitigation Contractor**
Name of Person/Firm:	_____	_____
	_____	_____
Business Address:	_____	_____
	_____	_____
	_____	_____
Telephone Number:	( ) _____	( ) _____

Proposed Mitigation Work Dates: **Start:** _____ **Finish:** _____

Permittee's Signature: _____ **Date:** _____

Printed Name: _____ **Title:** _____

Corps PMs: Susan Lee/Michael Sheehan

DEPARTMENT OF THE ARMY PERMIT

Permittee CT DOT
P.O. Box 317546
2800 Berlin Turnpike, Newington, CT 06131-7546

Permit No. NAE-2008-588

Issuing Office New England District

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description:

To discharge dredged and fill materials in approximately 1.30 acres (includes excavation/grading for mitigation work and fill for reconstruction of State boat launch) below the high tide line in the Housatonic River and adjacent tidal wetlands in association with replacement of the Interstate 95 (Moses Wheeler Bridge (State Project 138-221)) over the Housatonic River in Milford and Stratford, Connecticut; to construct and maintain structures/discharge fill for the reconstruction of a State boat launch facility consisting of a concrete launch ramp and pile-supported floating docks extending approximately 20m beyond mean high water in the Housatonic River in Milford, Connecticut. The existing bridge will be demolished. The new bridge entails widening in the northern direction to accommodate full width shoulders (inside and outside) for each direction of traffic. Associated work includes reconstruction of the I-95 east and west approach roads to the new bridge. The bridge project will require construction of temporary trestles to facilitate bridge construction and demolition of the existing bridge. The new bridge will be a concrete segmental girder superstructure supported on concrete pier substructures.

PROJECT DESCRIPTION CONTINUED ON PAGE 4

Project Location:

I -95 over the Housatonic River between Milford and Stratford, Connecticut

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on December 31, 2018. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

1. The permittee shall ensure that a copy of this permit is at the work site whenever work is being performed and that all personnel performing work at the site of the work authorized by this permit are fully aware of the terms and conditions of the permit. This permit, including its drawings and any appendices and other attachments, shall be made a part of any and all contracts and sub-contracts for work which affects areas of Corps of Engineers jurisdiction at the site of the work authorized by this permit. This shall be done by including the entire permit in the specifications for work.

(Special Conditions continued on Page 4)

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

(X) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature ~~below~~, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

(PERMITTEE) 10/4/2008 *(DATE)*

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

(DISTRICT ENGINEER) 9/22/08 *(DATE)*

Philip T. Feir
Colonel, Corps of Engineers
District Engineer

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(TRANSFEREE) *(DATE)*

☆U.S. GOVERNMENT PRINTING OFFICE: 1986 — 717-425

Project Description Continued from Page 1:
The existing State public access boat launch facility located under the bridge on the Milford shoreline will be closed during the entire construction time frame. This project includes the reconstruction and upgrade of the boat launch facility after completion of the bridge project. The reconstructed boat launch facility consists of a concrete boat launch ramp and two (2) pile-supported 2.4m wide x 30m long floating docks, one each extending approximately 20m beyond mean high water in the Housatonic River. Riprap, earthen, and concrete fill will be placed below high tide line for reconstruction of the boat launch ramp.

The work is described and shown on the attached plans entitled "REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER PROJECT NO. 138-221", shown on eighty-three (83) sheets, dated various dates ("10/20/03", "11/11/05", and "11/22/06").

Mitigation: Onsite mitigation will be constructed consisting of excavation/grading and tidal wetlands plantings to create tidal marsh areas adjacent to existing tide marsh on the Housatonic River shoreline at the bridge location. The mitigation areas total approximately 0.28 acres, and are located under the bridge on the shoreline areas on the Stratford (area 1) and Milford (area 2) sides of the Housatonic River. Mitigation will be constructed in accordance with the mitigation plan entitled "Reconstruction of the Moses Wheeler Bridge Stratford/Milford DOT Project #138-221 Compensatory Mitigation Plan", dated "July 2008", including page 12 (Revised 8/22/08), Part M (Revised 8/22/08), and Part N (Revised 8/22/08).

Special Conditions continued from Page 2:

If the permit is issued after the construction specifications but before receipt of bids or quotes, the entire permit shall be included as an addendum to the specifications. If the permit is issued after receipt of bids or quotes, the entire permit shall be included in the contract or sub-contract as a change order. The term "entire permit" includes permit amendments. Although the permittee may assign various aspects of the work to different contractors or sub-contractors, all contractors and sub-contractors shall be obligated by contract to comply with all environmental protection provisions of the entire permit, and no contract or sub-contract shall require or allow unauthorized work in areas of Corps jurisdiction.

2. The permittee shall complete and return the enclosed Compliance Certification Form within one month following the completion of the authorized work.

3. All areas of wetlands and/or waters, which are disturbed during construction, **except those authorized herein for permanent impact,** shall be restored to their approximate original elevation (but not higher) and condition by careful protection, and/or removal and replacement, of existing soil and vegetation. In addition, if upland clearing, grubbing, or other construction activity results in, or may result in, soil erosion with transport and deposition into a wetland or waterway, devices such as geotextile silt fences, sediment trenches, etc., shall be installed and properly maintained to minimize such impacts during construction. These devices must be removed upon completion of work and stabilization of disturbed areas. The sediment collected by these devices must also be removed and placed upland, in a manner that will prevent its later erosion and transport to a waterway or wetland.

4. No temporary fill (e.g., access roads, cofferdams) may be placed in waters or wetlands unless specifically authorized by this permit. If temporary fill is used, it shall be disposed of at an upland site and suitably contained to prevent its subsequent erosion into a water of the U.S., and the area shall be restored to its original contours (but not higher). During use, such temporary fill must be stabilized to prevent erosion or, in the case of flowing water (rivers or streams), clean washed stone should be used.

5. Mitigation shall consist of creation of 0.28 acres of salt marsh areas at two locations (below high tide line along west shoreline of Housatonic River in Stratford (area 1) and below high tide line along east shoreline of Housatonic River in Milford (area 2)), and shall be performed in accordance with the attached mitigation plan entitled "Reconstruction of the Moses Wheeler Bridge Stratford/Milford DOT Project #138-221 Compensatory Mitigation Plan", dated "July 2008", including page 12 (Revised 8/22/08), Part M (Revised 8/22/08), and Part N (Revised 8/22/08).

6. Your responsibility to complete the required compensatory mitigation as set forth in special condition #5 above will not be considered fulfilled until you have demonstrated mitigation success and have received written verification from the U.S. Army Corps of Engineers. The term 'mitigation success' means success as defined in the mitigation plan this permit requires you to implement. Demonstration of success under this permit shall consist of the required mitigation monitoring, corrective measures, submittal of mitigation monitoring reports, and a final wetland assessment.

7. Pile driving for construction of the temporary trestle within the eastern shallows (project area extending from high tide line on Milford shoreline water ward to existing pier 2E) and western shallows (project area extending from high tide line on Stratford shoreline water ward to existing pier 2W) is prohibited from February 1 through May 31. If pile driving associated with trestle construction cannot be avoided within the eastern and western shallows from February 1 through May 31, pile driving must be contained within a silt curtain to minimize the impacts of turbidity on winter flounder eggs and larvae.

8. Installation of steel casings (caisson construction) associated with construction of new bridge piers is permitted at any time of year in any portion of the river provided no suspended sediment plumes are visible in the river. Within the eastern shallows and within the western shallows of the project area, any installation of steel casings for new pier construction occurring from February 1 through May 31 is limited to one pier line at a time to avoid cumulative impacts on Essential Fish Habitat for winter flounder. Once steel casings are in place, work within the steel casings is permitted year round.

9. Installation of sheet piles in the western and eastern shallows of the project area is prohibited from February 1 through May 31. If installation of sheet piles in the western and eastern shallows (to include existing piers 2W, 3W, 2E, 3E, 4E) cannot be avoided during this time period, driving of sheet piles must be contained within a silt curtain to minimize the impacts of turbidity on winter flounder eggs and larvae.

10. In the event blasting is proposed for demolition of any existing bridge component(s), the permittee shall submit a detailed blasting plan to the Corps of Engineers (Attn: Susan Lee, USACE – New England District, 696 Virginia Road, Concord, MA 01742-2751) for review and approval in coordination with the National Marine Fisheries Service. The blasting plan shall include the proposed method of blasting, specific construction measures to be used to mitigate the effects of blasting within the marine environment, proposed demolition schedule, and proposed duration of blasting. **No blasting shall be conducted without written approval from the Corps of Engineers**.

11. Runoff control devices/measures shall be installed and maintained during wetland fill activity to minimize the additional re-suspension of sediments in the water column. All fill activity in wetlands/waters shall be conducted during periods of low tide.

12. In -water barge(s) used as a platform for construction activity shall not rest at the bottom of the river at any time.

13. Netting and/or a debris containment system shall be installed, where practical, during demolition to prevent large debris from falling into the river. Any debris that falls into the river during demolition activities shall be removed immediately upon completion of bridge demolition activities.

14. All pile driving, demolition of existing bridge piers, and installation of steel casings for new pier construction is prohibited from April 1 through June 30 in the central portion (between existing pier 2W and existing pier 2E) of the Housatonic River. If pile driving, demolition of existing bridge piers, and installation of steel casings for new pier construction cannot be avoided in the central portion of the river during the time period from April 1 through June 30, noise levels must be monitored with appropriate equipment capable of measuring underwater sound levels (hydroacoustic monitoring) to protect migrating diadromous species. Noise levels shall not exceed a sound exposure level (SEL) of 187 dB re1μPa^2 sec (sound level measured in decibels relative to one micro Pascal over a one second period), and a peak sound pressure level of 208 dB in any single strike, as measured at 10 meters from the source. If noise levels exceed these thresholds, the associated construction activities must cease until July 1, when diadromous fish migration activity is expected to be minimal. Activities may continue with the use of a bubble curtain or other noise mitigating device(s) if the permittee can demonstrate that sound levels can be reduced to a SEL of 187 dB re 1 μPa^2 sec or less, and a peak sound pressure level of 208 dB or less in any single strike, as measured at 10 meters from the source.

15. Demolition of the existing piers shall be performed within sheet pile enclosures.

16. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the

structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

17. The permittee shall not interfere with Corps of Engineers personnel or its contractors engaged in hydrographic surveys, maintenance or improvement of the existing Federal Navigation Project. If, in the opinion of the Corps of Engineers, the permittee's structures and/or vessels attached to them must be moved/removed to allow for the maintenance or improvement of the existing Federal Navigation Project, the permittee shall remove/move such structures and/or vessels, as directed by the Corps of Engineers.

18. Work associated with this permit shall not affect the depth or width of the Federal Navigation Project (FNP) (federal channel) except as authorized by this permit. Any material, machinery or equipment lost, dumped, thrown into, or otherwise entering the waterway shall be removed immediately or as soon as possible. If immediate removal is impractical and the object entering the waterway is or could become an obstruction or hazard to navigation, the object shall be marked immediately to protect navigation and the Coast Guard shall be notified immediately. Upon project completion, the permittee shall submit to the Corps a certification from a registered professional engineer or surveyor that the elevation and condition of the bottom of the waterway have not changed and that the waterway is clear of materials or debris resulting from construction. The submittal shall include a survey plan showing pre- and post-construction elevations and contours of the bottom of the waterway.

19. The permittee shall not hold the Government or its contractor responsible for damage(s) to structures during surveying or dredging operations.

20. The permittee shall perform an electronic full sweep hydrographic survey prior to the start of construction activities in the Housatonic River and after completion of all construction activities in the Housatonic River. **The limits of electronic sweep survey coverage shall extend the entire width of the existing federal navigation channel at the bridge crossing and within the limits of the existing/reconstructed fender system. Beyond the limits of the fender system, the limit of survey shall extend out to 54.0 feet beyond the easterly and westerly limits of the federal navigation channel, and shall extend upstream to the southerly face of the Devon Railroad Bridge and downstream to 200 feet south of the right-of-way limits of the new I-95 bridge**. Successive sweeps will have a minimum overlap of 3 feet. Sounding lines shall be numbered on depth sounder rolls and plots. Event marks shall be taken at 30-second intervals correlating horizontal position with depth and shall be marked and numbered on depth sounder rolls. Tide readings shall be made with every change of 0.1' and recorded on the Fathometer roll or recorded in field book with date and time. Sweeping shall be done only during daylight hours. The applicable area(s), as described above, shall be swept clear to the required depth(s). Survey data submitted to the Corps of Engineers shall be such as to allow independent plotting and verification of survey results. The permittee shall allow a Corps of Engineers representative to accompany the survey party during the performance of the sweep surveys. Plans adequately showing the results of these sweep surveys along with a written description of how they were performed and all field books, notes and Fathometer rolls shall be submitted for review and approval by the Corps of Engineers.

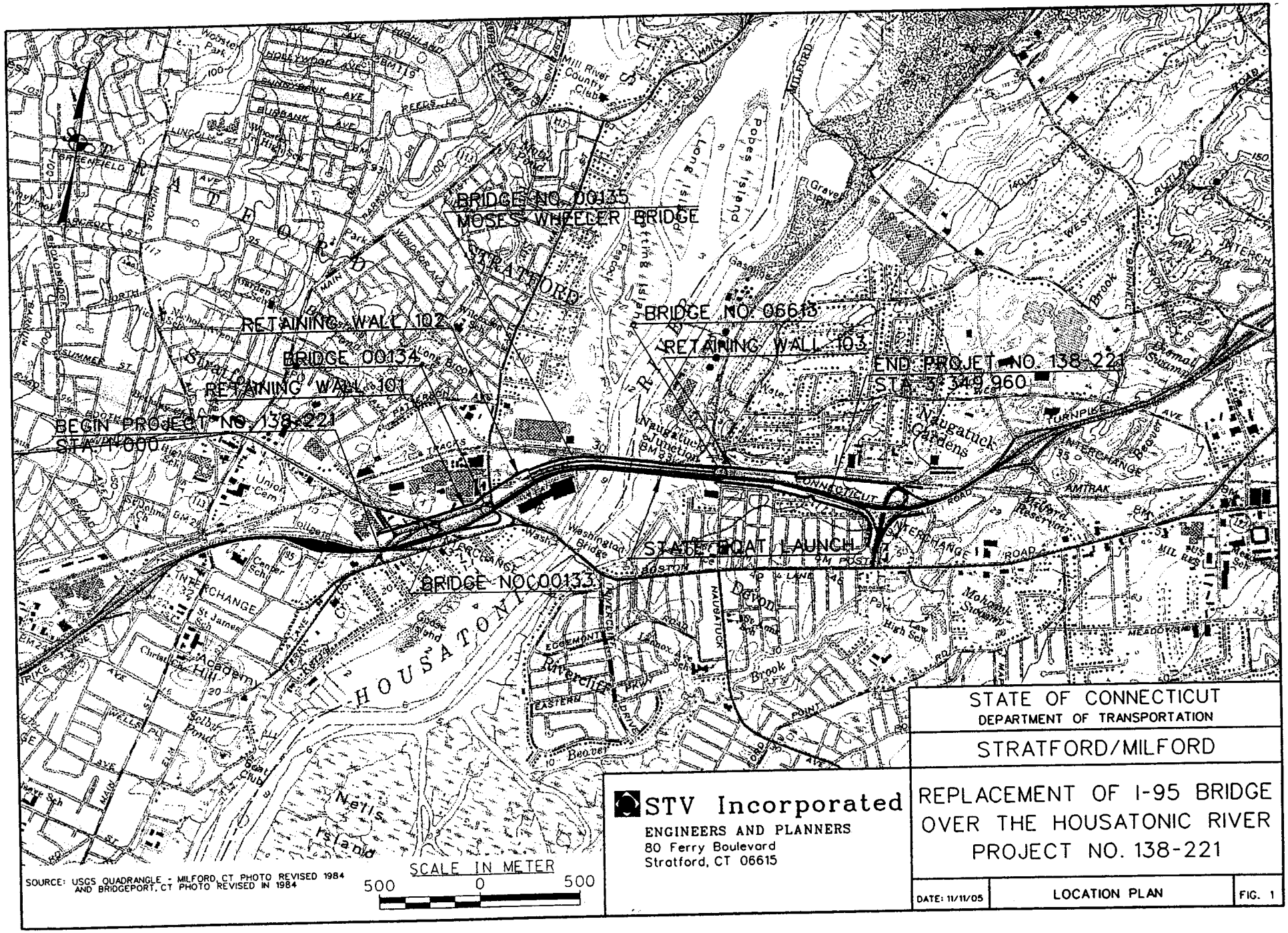
21. At least 30 calendar days prior to the proposed start of the pre- and post-construction hydrographic surveys required by this permit, the permittee shall submit a scope of work for survey to the Corps of Engineers (Attn: Susan Lee, Regulatory Division) for review and concurrence. The scope of work shall describe the proposed equipment/system to be employed for hydrographic survey, the method of hydrographic sweep survey, and a sketch of the setup to verify sweep coverage. **The pre- and post-construction sweep surveys shall not be conducted until the Corps of Engineers provides written concurrence with the proposed method of sweep.**

22. The permittee shall provide at least seven (7) work days prior notification to the Corps of Engineers of the start date of pre-construction and post-construction hydrographic sweep surveys and allow a Corps of Engineers representative to accompany the survey party during the performance of the pre-construction and post-construction sweep surveys. **Notification shall be made to Stephen Johnston, Survey Section at 978-318-8527, or Maureen Murray at 978-318-8526.**

23. The permittee shall provide at least seven (7) work days prior notification to Commander **First Coast Guard District, Attn: Chief, Marine Safety, 408 Atlantic Avenue, Boston, MA 02110-3350** of the start date of any work in the Housatonic River. Notification shall be made to US Coast Guard at **(800) 368-5647 or 617-223-8439**.

24. No later than 30 days after completion of the bridge project, including demolition of the existing bridge, a full-sized scaled as-built drawing(s) of the completed bridge project shall be submitted to the Corps of Engineers. Drawing(s) shall accurately show the easterly and westerly limits of the Federal Navigation Project (FNP) (federal channel) within the project area, and shall show the position of the reconstructed bridge fender system located with horizontal coordinates in feet (based on the Lambert Grid System for the State of Connecticut). Coordinates shall be shown at the northerly and southerly limits of the fenders and at each point where the fender system changes direction. The drawing(s) shall be stamped by a Professional Engineer or Registered Land Surveyor registered in the state in which the work is being performed. The drawing(s) shall include the dates of the survey and drawing(s), a north arrow, shoreline features, a horizontal grid, and horizontal and vertical bar (graphic) scales, datums and reference benchmarks. Drawing(s) shall also show the elevation of the horizontal plane of mean lower low water. A narrative describing the survey equipment and methodology shall also be provided. Calibration techniques and information shall be provided if survey is performed with GPS equipment. The above submittal shall be marked with the words "**Permit No. NAE-2008-588**" and shall be addressed to "Attn: Susan Lee, CENAE-R, U.S. Army Corps of Engineers, 696 Virginia Road, Concord, MA 01742-2751." Documents which are not marked and addressed in this manner may not reach their intended destination and do not comply with the requirements of this permit.

25. Except where stated otherwise, reports, drawings, correspondence and any other submittals required by this permit shall be marked with the words "**Permit No. NAE-2008-588**", and shall be addressed to "Policy Analysis and Technical Support Branch, CENAE-R-PT", U.S. Army Corps of Engineers, 696 Virginia Road, Concord, MA 01742-2751." Documents which are not marked and addressed in this manner may not reach their intended destination and do not comply with the requirements of this permit.



SOURCE: USGS QUADRANGLE - MILFORD, CT PHOTO REVISED 1984 AND BRIDGEPORT, CT PHOTO REVISED IN 1984

STV Incorporated
ENGINEERS AND PLANNERS
80 Ferry Boulevard
Stratford, CT 06615

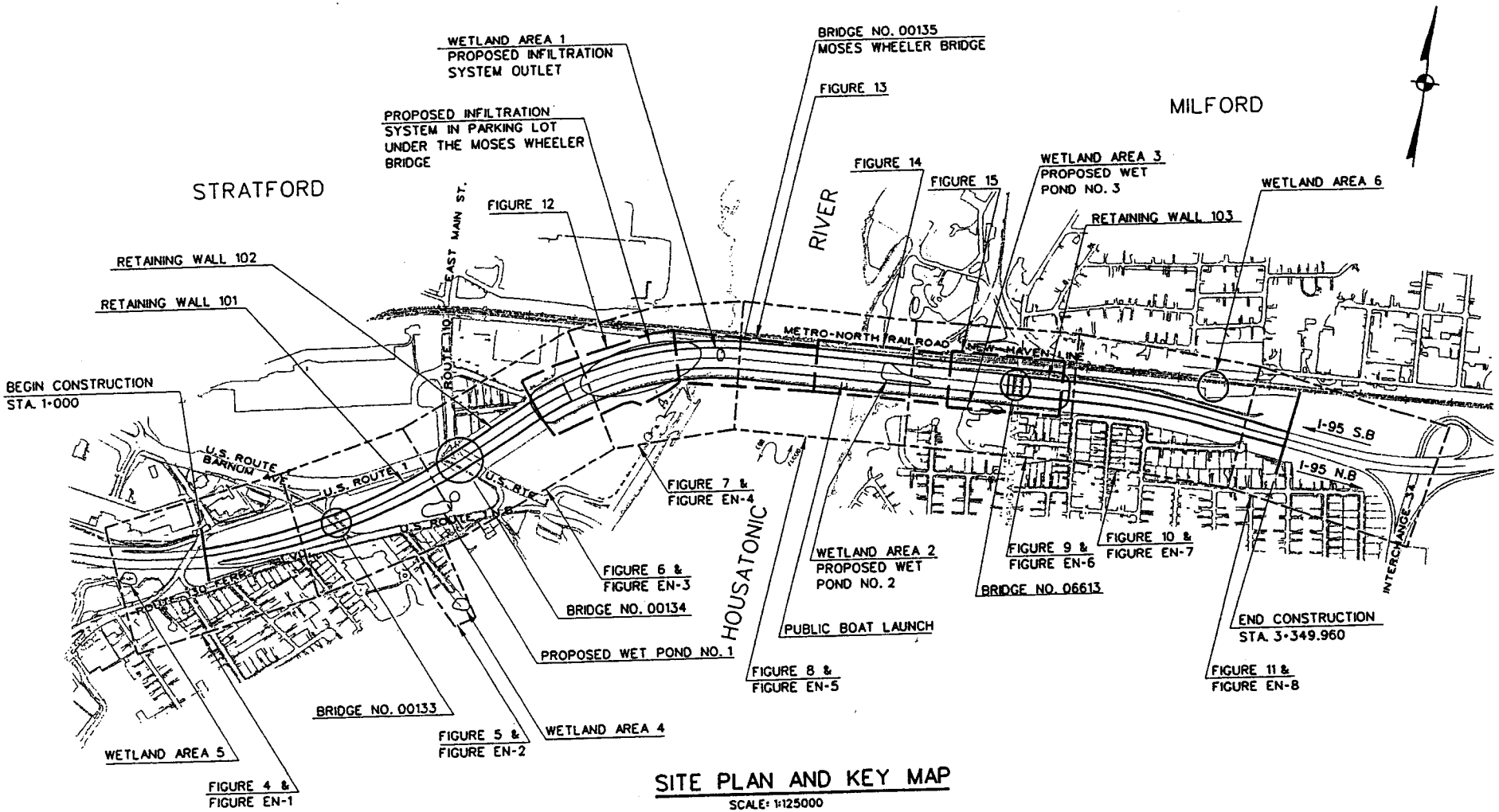
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

STRATFORD/MILFORD

REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER PROJECT NO. 138-221

DATE: 11/11/05 | LOCATION PLAN | FIG. 1

OUSP PLATES



SITE PLAN AND KEY MAP

SCALE: 1:125000

HIGHWAY FIGURE BOUNDRY (FIG. 4 TO 11 AND EN-1 TO EN-8)

BRIDGE FIGURE BOUNDRY (FIG. 12 TO 15)

NOTE: ALL STATIONING AND DIMENSIONS ARE IN METERS UNLESS NOTES OTHERWISE

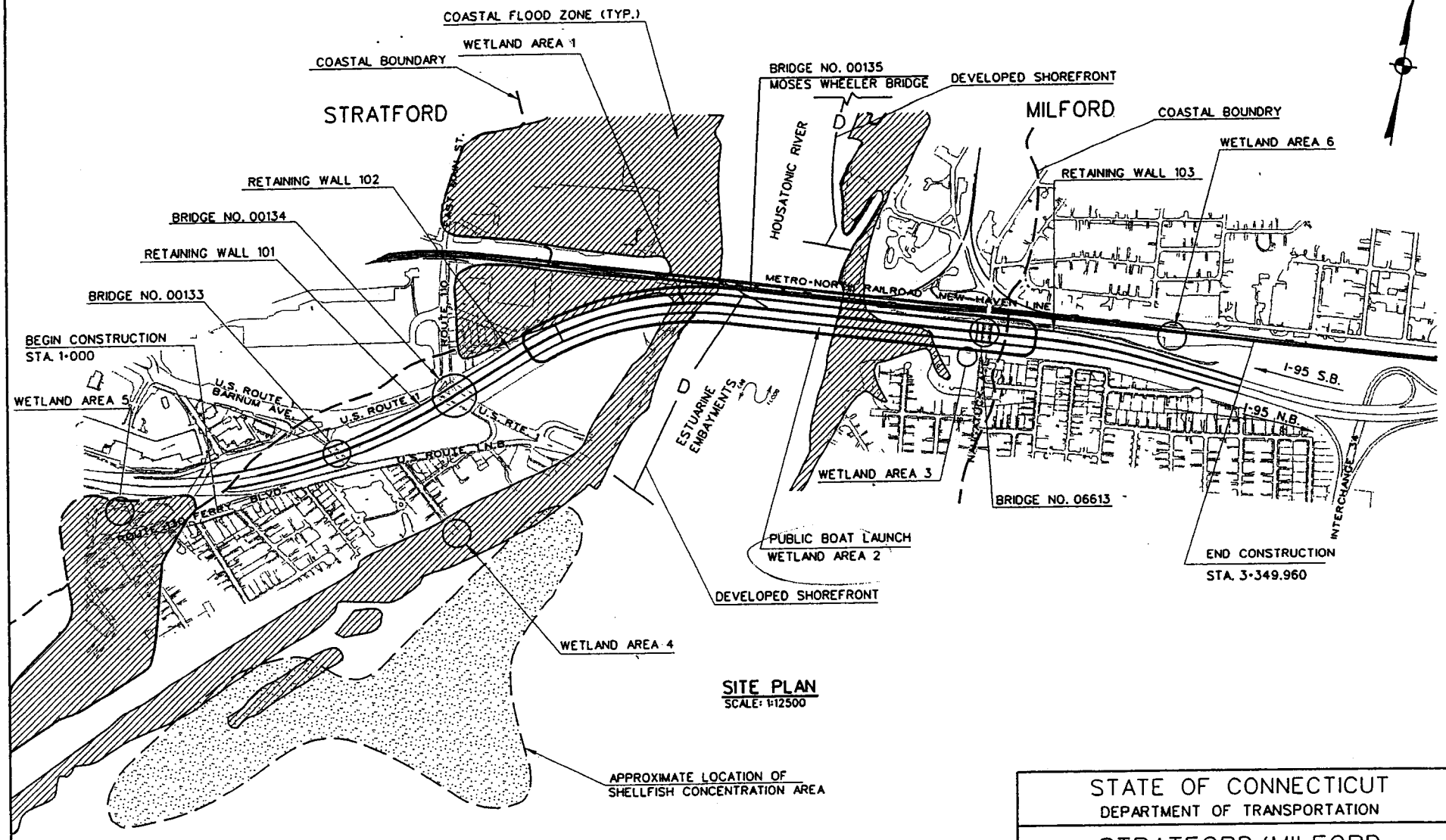
STV Incorporated
ENGINEERS AND PLANNERS
80 Ferry Boulevard
Stratford, CT 06615

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

STRATFORD/MILFORD

REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER PROJECT NO. 138-221

DATE: 11/11/05	SITE PLAN & KEY MAP	FIG. 2



LIMITS OF COASTAL RESOURCES ARE BASED ON CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION MAP TITLED "COASTAL RESOURCES", DATED 1979, MILFORD, CT QUADRANGLE

LIMITS OF SHELLFISH CONCENTRATION AREA IS BASED ON CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION MAP TITLED "SHELLFISH CONCENTRATION AREAS", DATED 1979, MILFORD, CT QUADRANGLE

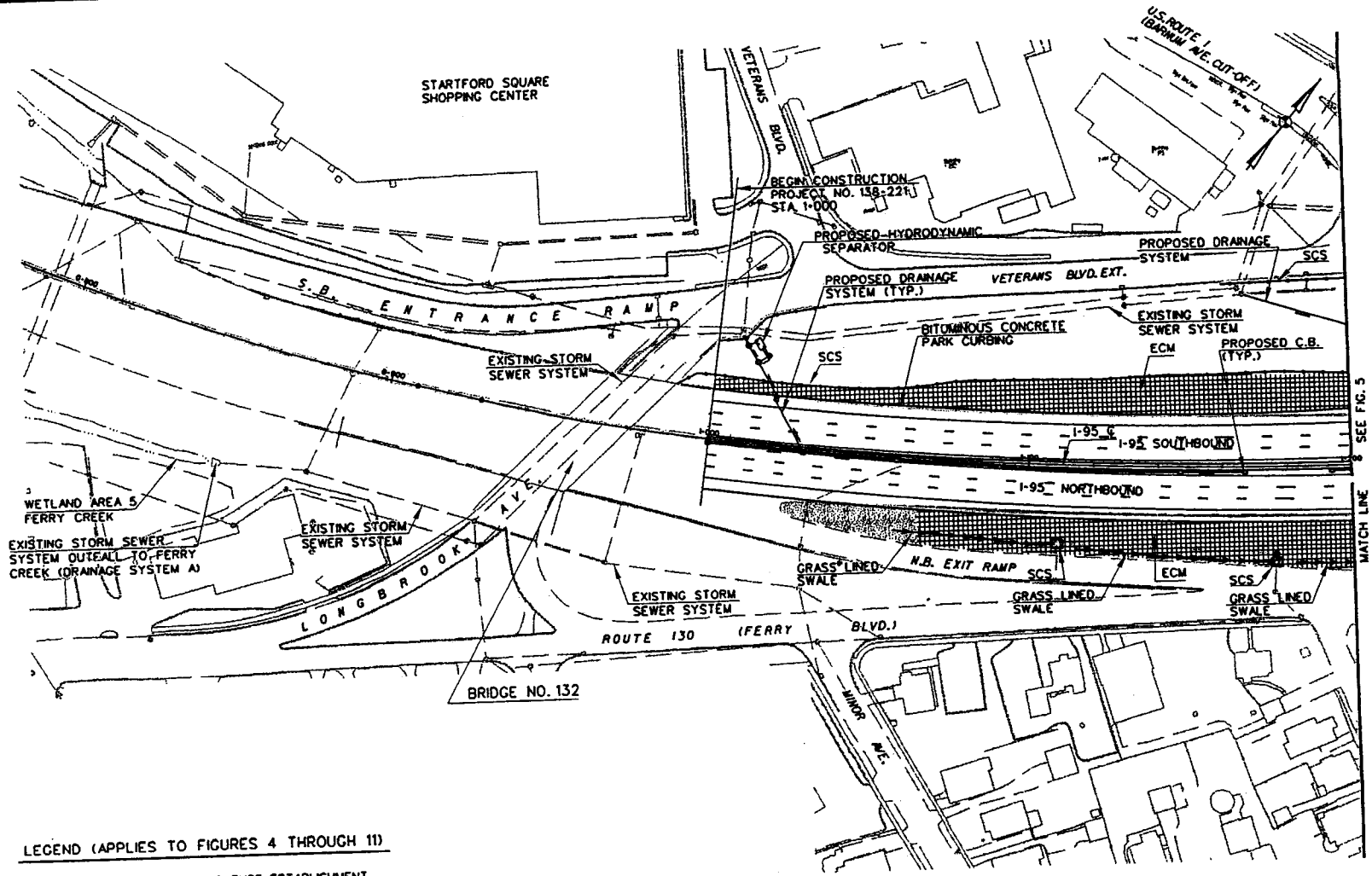
STV Incorporated
ENGINEERS AND PLANNERS
80 Ferry Boulevard
Stratford, CT 06615

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

STRATFORD/MILFORD

REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER PROJECT NO. 138-221

DATE: 11/11/05	COASTAL RESOURCES	FIG. 3



LEGEND (APPLIES TO FIGURES 4 THROUGH 11)

- LIMITS FOR TURF ESTABLISHMENT AND FURNISH AND PLACING SOIL
- GRASS LINED DRAINAGE SWALE (UNLESS NOTED OTHERWISE)

SEDIMENTATION CONTROL SYSTEMS (SCS)

- SCS — HAY BALES OR GEOTEXTILE FENCE SYSTEM AT TOE OF FILL SLOPE
- SCS — HAY BALES OR GEOTEXTILE FENCE AT CATCH BASINS IN A DEPRESSION
- SCS — HAY BALES OR GEOTEXTILE FENCE CHECK DAM IN DRAINAGE SWALE
- ECM — EROSION CONTROL MATTING (ECM) ON EMBANKMENTS, INCLUDES TOPSOIL AND TURF ESTABLISHMENT

GENERAL HIGHWAY PLAN

SCALE: 1:2000

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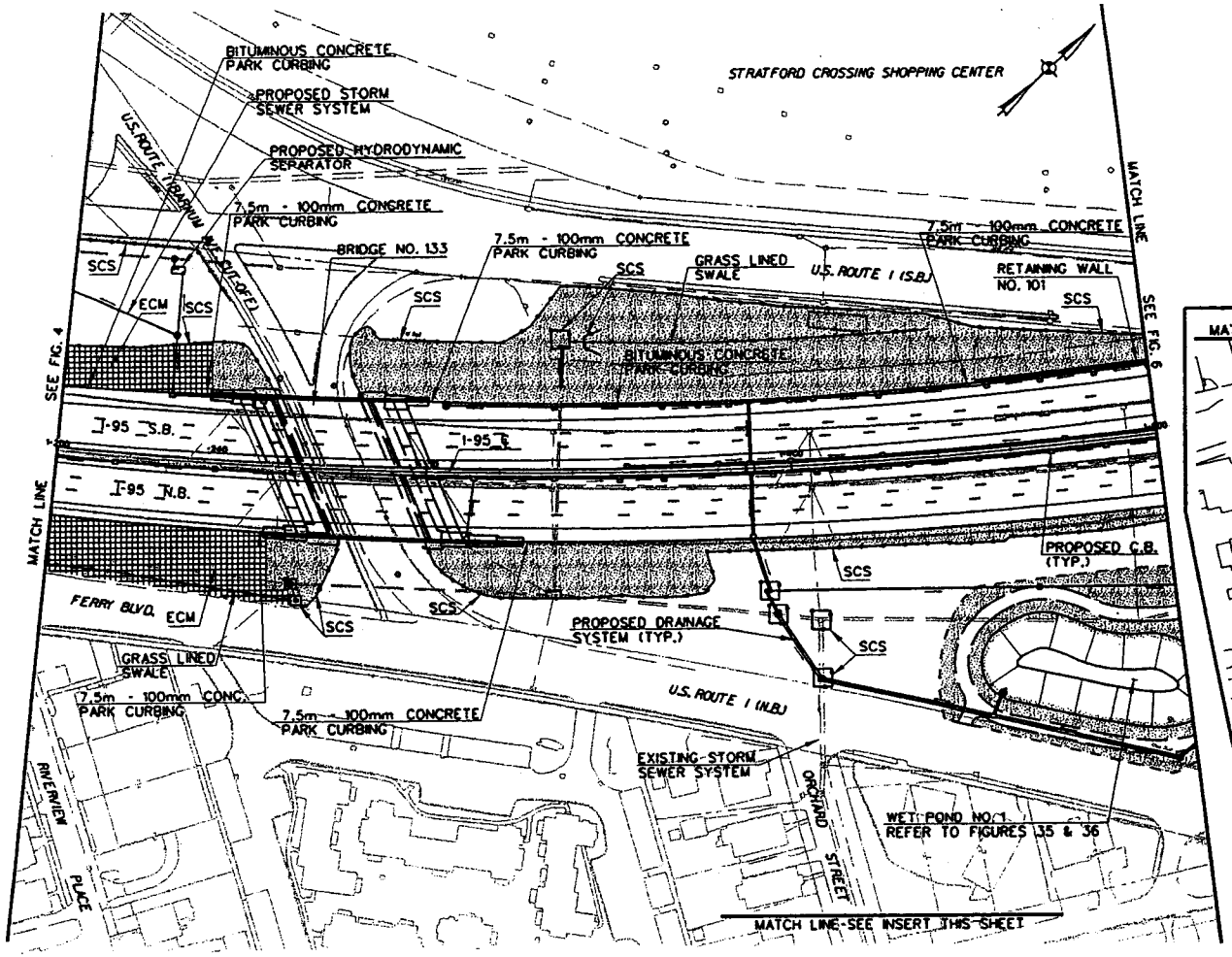
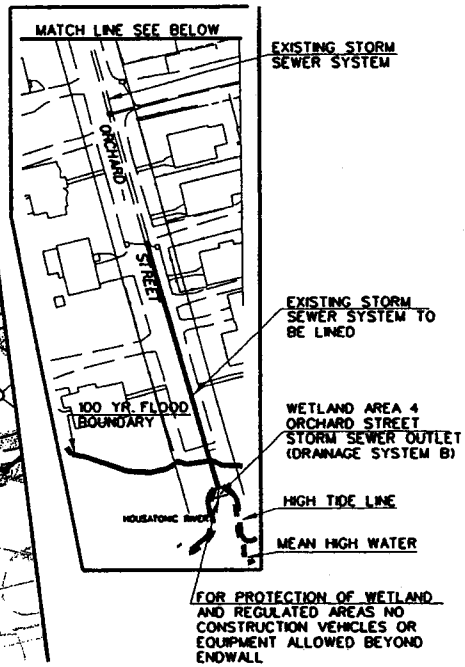
DEPARTMENT OF TRANSPORTATION

STRATFORD/MILFORD

REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER
PROJECT NO. 138-221

DATE: 11/11/05 | HIGHWAY PLAN | FIG. 4





NOTES:

1. PROPOSED WET POND NO. 1 AREA WILL BE USED AS AN EQUIPMENT STAGING AND WASTE STOCKPILE AREA. THE PROPOSED POND WILL BE CONSTRUCTED DURING THE FINAL CONSTRUCTION STAGE OF THE PROJECT.
2. AREAS WITHIN THE STATE RIGHT OF WAY WILL BE USED FOR EQUIPMENT STAGING AND WASTE STOCKPILE AREAS.

GENERAL HIGHWAY PLAN

SCALE: 1"=200'

WATER ELEVATIONS DATUM	NAVD 1988 (m)	NGVD 1929 (ft.)
MEAN LOW WATER	-1.15	-2.5
MEAN HIGH WATER	0.91	4.1
HIGH TIDE LINE	1.41	5.7
100 YEAR FLOOD ELEVATION	2.72	10

NOTE: PROJECT USES NAVD 1988 DATUM

LEGEND

MHW - - - - - - MEAN HIGH WATER ELEVATION

HTL - — — — HIGH TIDE LINE

——— 100 YEAR FLOOD BOUNDARY

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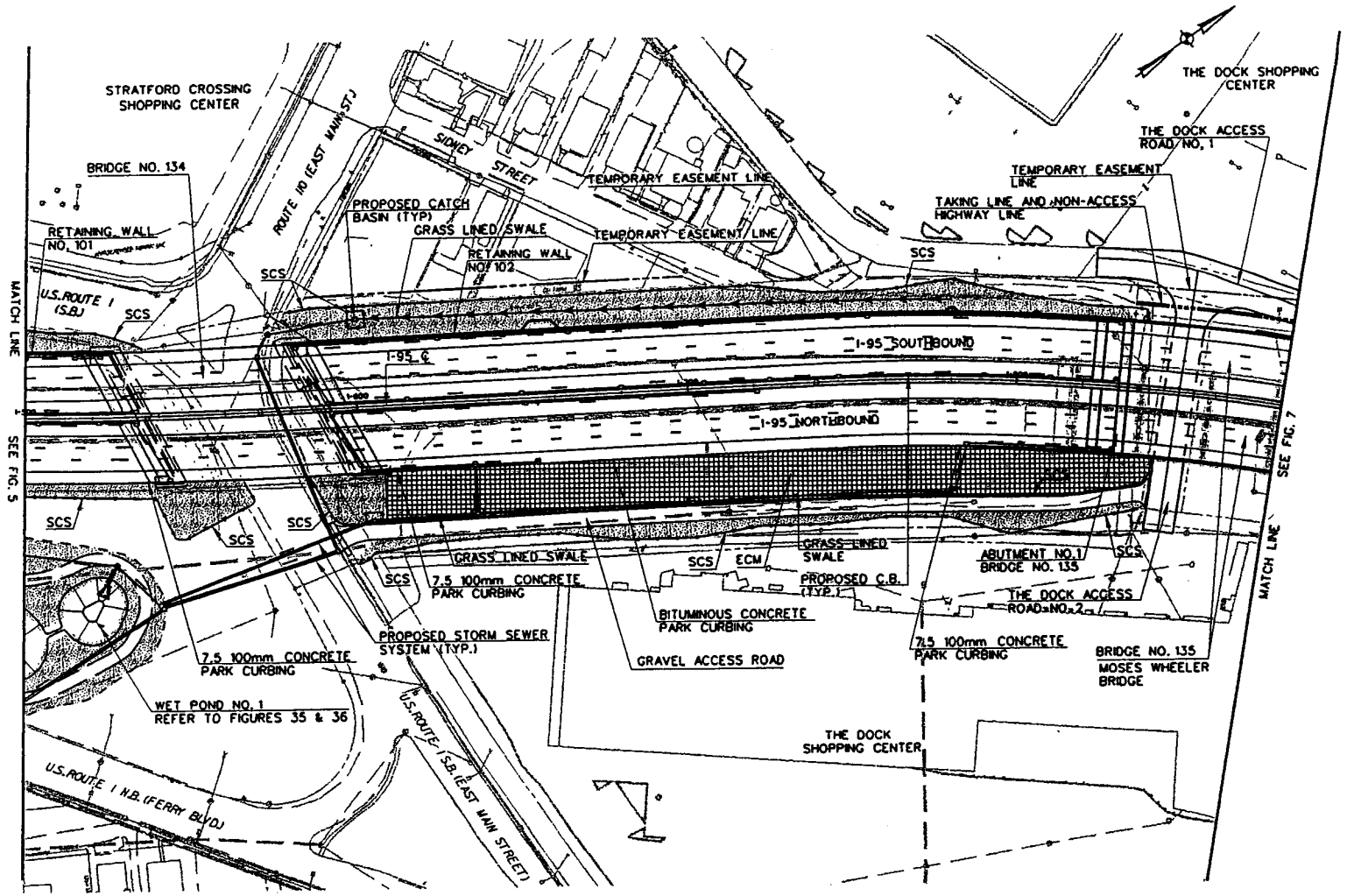
REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER PROJECT NO. 138-221

DATE: 11/11/05	HIGHWAY PLAN	FIG. 5



GENERAL HIGHWAY PLAN

SCALE: 1"=200'

NOTES:
1. PROPOSED WET POND NO. 1 AREA WILL BE USED AS AN EQUIPMENT STAGING AND WASTE STOCKPILE AREA. THE PROPOSED POND WILL BE CONSTRUCTED DURING THE FINAL CONSTRUCTION STAGE OF THE PROJECT.
2. AREAS WITHIN THE STATE RIGHT OF WAY WILL BE USED FOR EQUIPMENT STAGING AND WASTE STOCKPILE AREAS.

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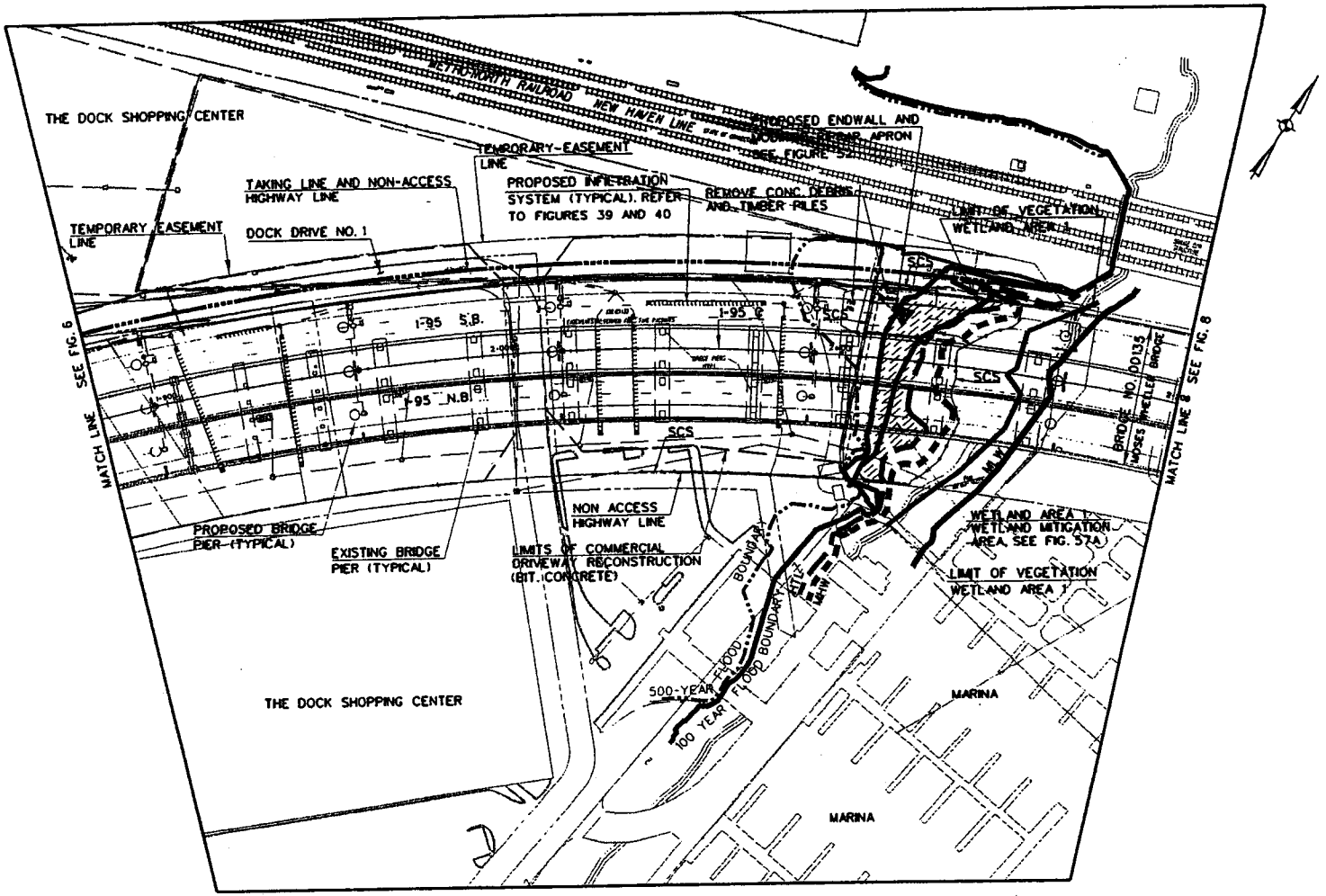
DATE: 11/11/05 | HIGHWAY PLAN | FIG. 6



GENERAL HIGHWAY PLAN
SCALE: 1:2000

WATER ELEVATIONS DATUM	NAVD 1988 (m)	NGVD 1929 (ft.)
MEAN LOW WATER	-1.10	-2.5
MEAN HIGH WATER	0.91	4.1
HIGH TIDE LINE	1.41	5.7
100 YEAR FLOOD ELEVATION	2.72	10

NOTE: PROJECT USES NAVD 1988 DATUM

LEGEND

- MLW — MEAN LOW WATER ELEVATION
- MHW — MEAN HIGH WATER ELEVATION
- HTL — HIGH TIDE LINE
- WETLAND VEGETATION LIMIT
- 100 YEAR FLOOD BOUNDARY
- 500 YEAR FLOOD BOUNDARY

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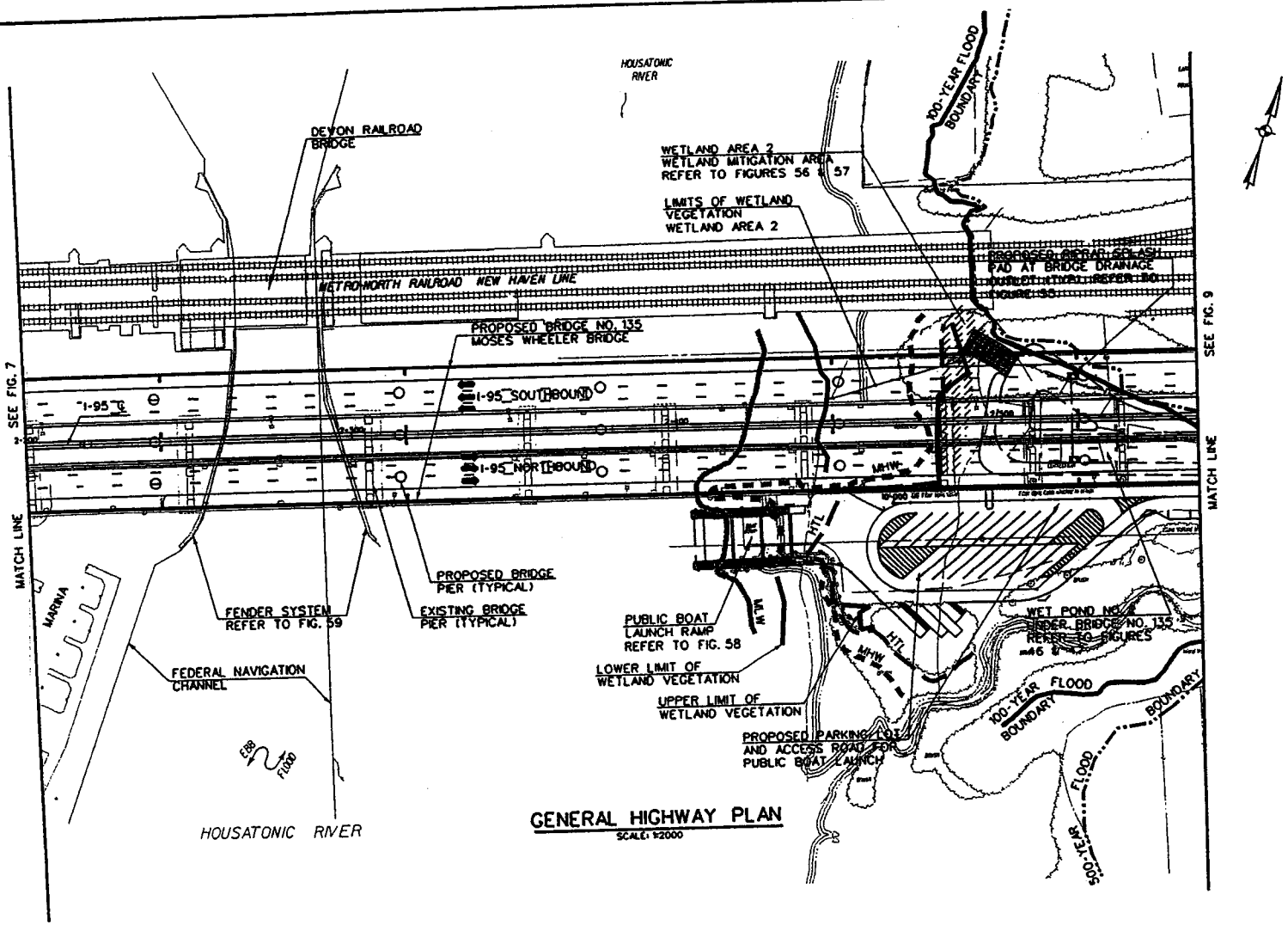
REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER PROJECT NO. 138-221

DATE: 11/22/06 | HIGHWAY PLAN | FIG. 7



GENERAL HIGHWAY PLAN

SCALE: 1"=200'

WATER ELEVATIONS DATUM	NAVD 1988 (m)	NGVD 1929 (ft.)
MEAN LOW WATER	-1.10	-2.5
MEAN HIGH WATER	0.91	4.1
HIGH TIDE LINE	1.41	5.7
100 YEAR FLOOD ELEVATION	2.72	10

NOTE: PROJECT USES NAVD 1988 DATUM

LEGEND:

- MLW — MEAN LOW WATER ELEVATION
- MHW — MEAN HIGH WATER ELEVATION
- HTL — HIGH TIDE LINE
- WETLAND VEGETATION LIMIT
- 100 YEAR FLOOD BOUNDARY
- 500 YEAR FLOOD BOUNDARY

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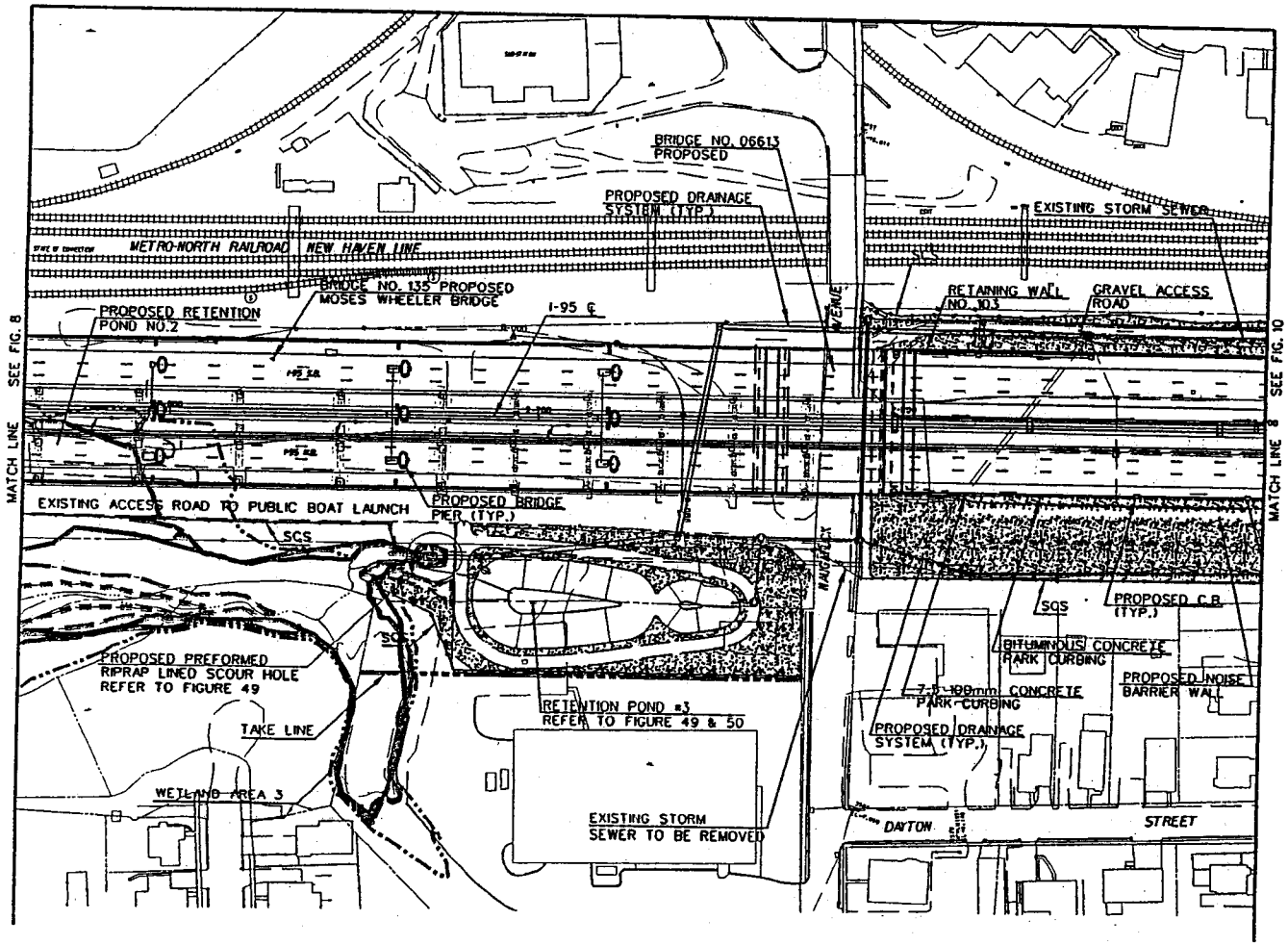
REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER PROJECT NO. 138-221

DATE: 11/22/06	HIGHWAY PLAN	FIG. 8



NOTE:

THE AREA BENEATH THE EXISTING BRIDGE AND ACCESS ROAD WILL BE USED AS AN EQUIPMENT STAGING AREA.

GENERAL HIGHWAY PLAN

SCALE: 1"=200'

WATER ELEVATIONS DATUM	NAVD 1988 (m)	NGVD 1929 (ft.)
MEAN LOW WATER	-1.15	-2.5
MEAN HIGH WATER	0.91	4.1
HIGH TIDE LINE	1.41	5.7
100 YEAR FLOOD ELEVATION	2.72	10

NOTE: PROJECT USES NAVD 1988 DATUM

LEGEND

- MLW — MEAN LOW WATER ELEVATION
- MHW — MEAN HIGH WATER ELEVATION
- HTL — HIGH TIDE LINE
- WETLAND VEGETATION LIMIT
- 100 YEAR FLOOD BOUNDARY
- 500 YEAR FLOOD BOUNDARY

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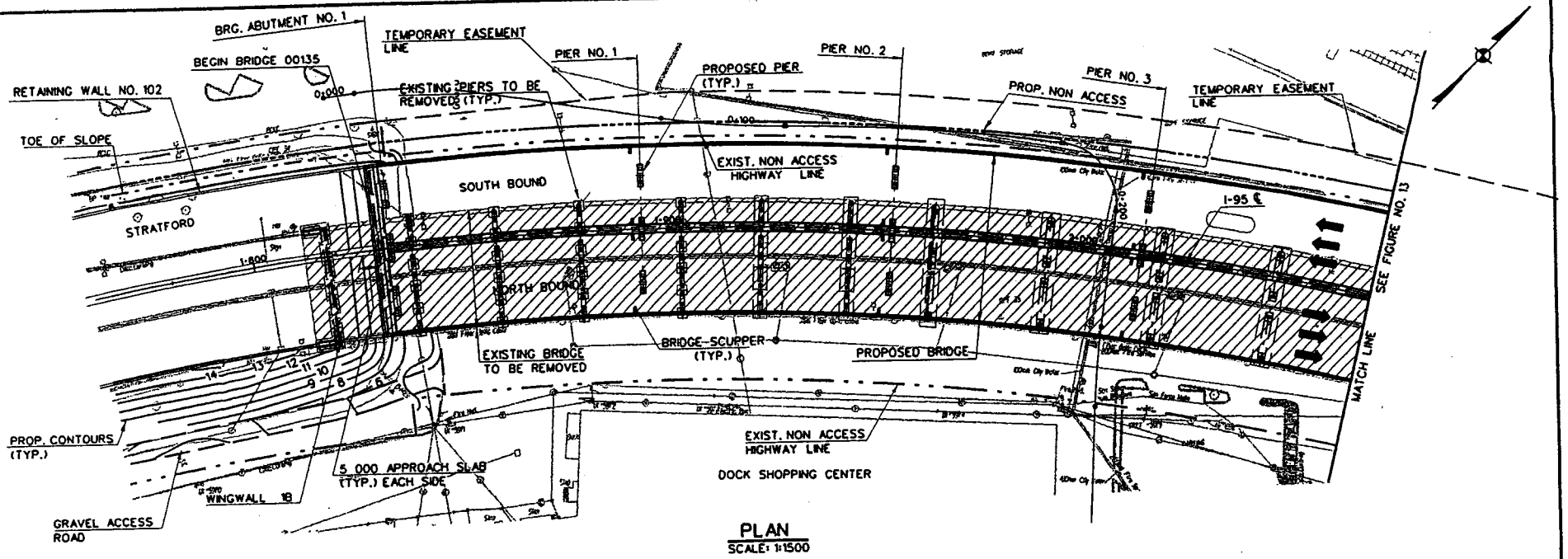
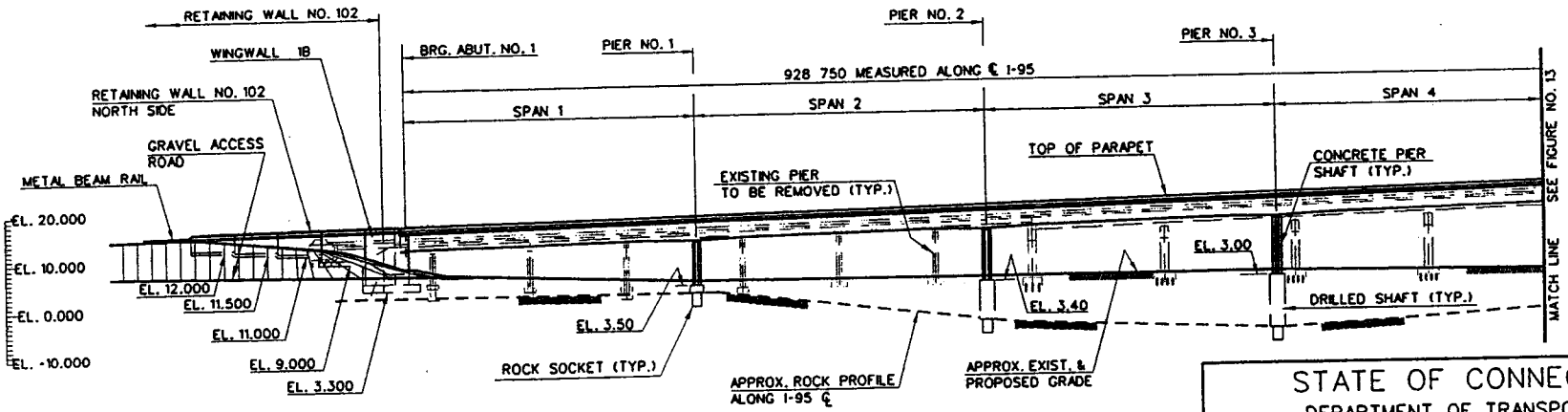
REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER PROJECT NO. 138-221

DATE: 10-20-03 | HIGHWAY PLAN | FIG. 9



PLAN
SCALE: 1:1500



ELEVATION - SOUTH FASCIA
SCALE: 1:1500

NOTE:
THIS PORTION OF THE PROJECT IS ABOVE THE 100 YEAR FLOOD ZONE.

LEGEND

LIMITS OF EXISTING MOSES WHEELER BRIDGE

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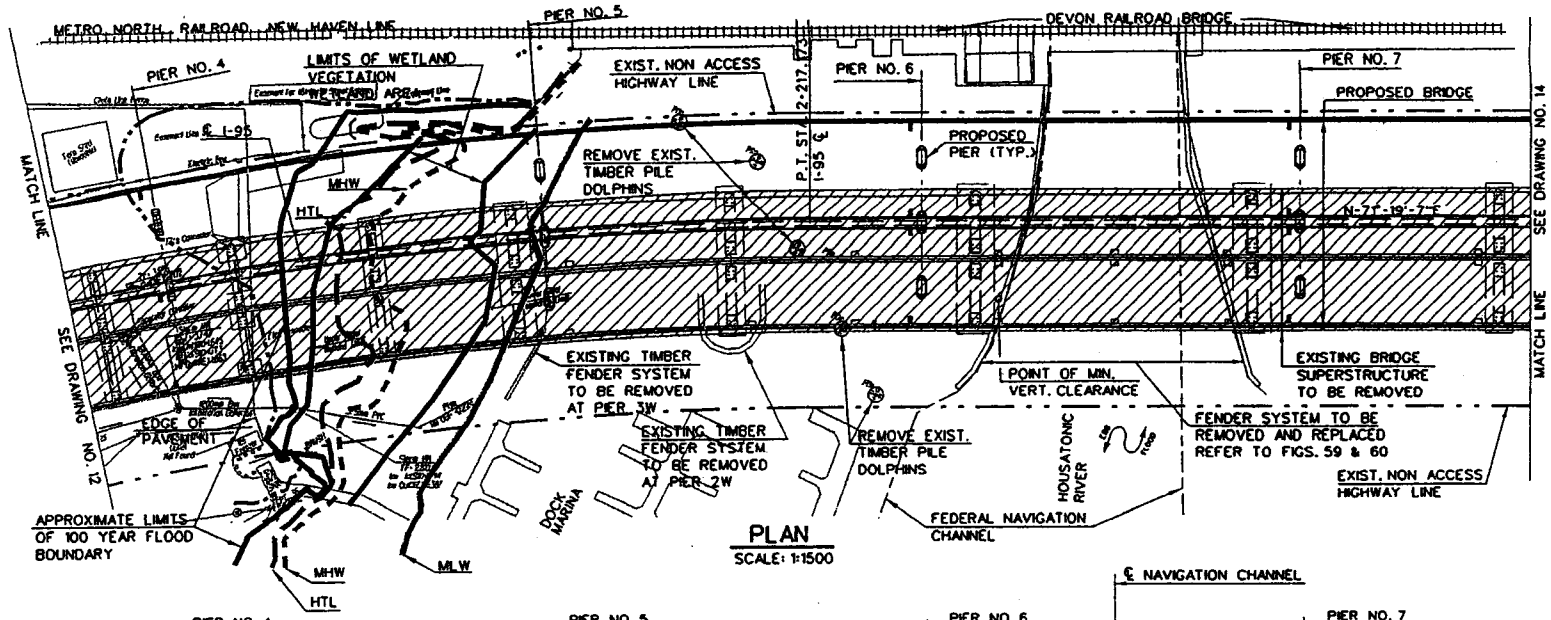
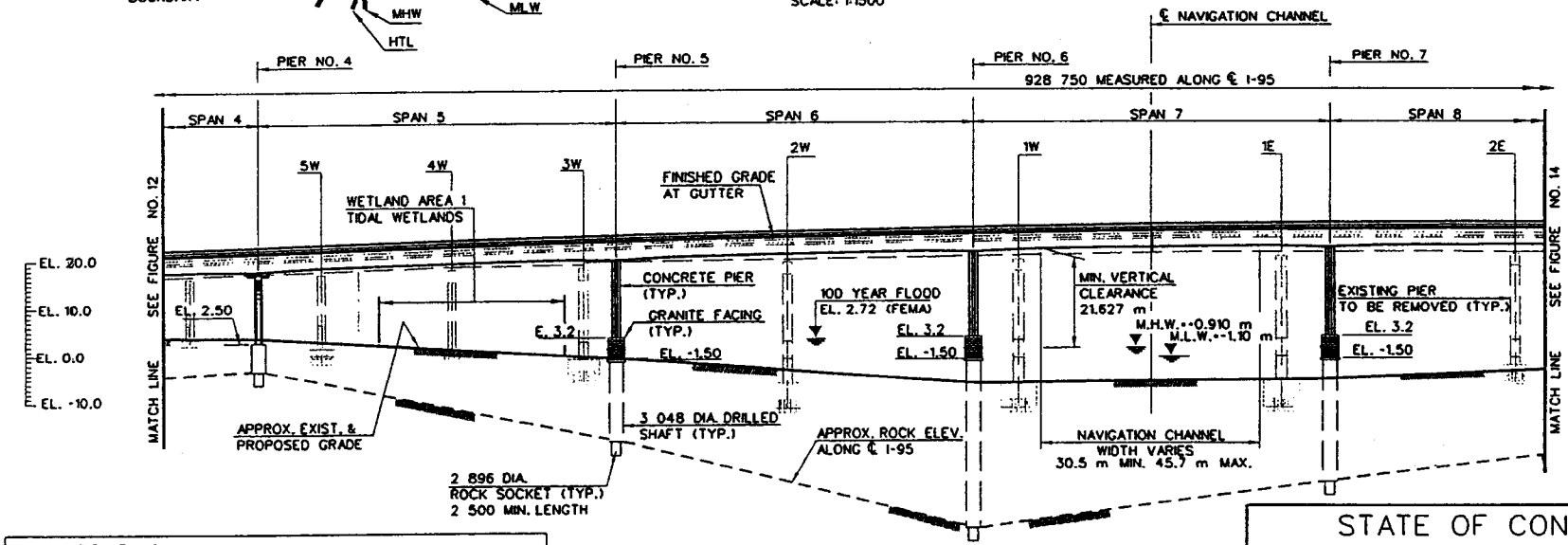
REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER PROJECT NO. 138-221

DATE: 11/11/05 | GENERAL BRIDGE PLAN | FIG. 12



PLAN
SCALE: 1:1500



ELEVATION - SOUTH FASCIA
SCALE: 1:1500

WATER ELEVATIONS DATUM	NAVD 1988 (m)	NGVD 1929 (ft.)
MEAN LOW WATER	-1.10	-2.5
MEAN HIGH WATER	0.91	4.1
HIGH TIDE LINE	1.41	5.7
100 YEAR FLOOD ELEVATION	2.72	10

NOTE: PROJECT USES NAVD 1988 DATUM

LEGEND

- MLW — MEAN LOW WATER ELEVATION
- MHW — MEAN HIGH WATER ELEVATION
- HTL — HIGH TIDE LINE
- WETLAND VEGETATION LIMIT
- 100 YEAR FLOOD BOUNDARY
- 500 YEAR FLOOD BOUNDARY
- LIMITS OF EXISTING MOSES WHEELER BRIDGE

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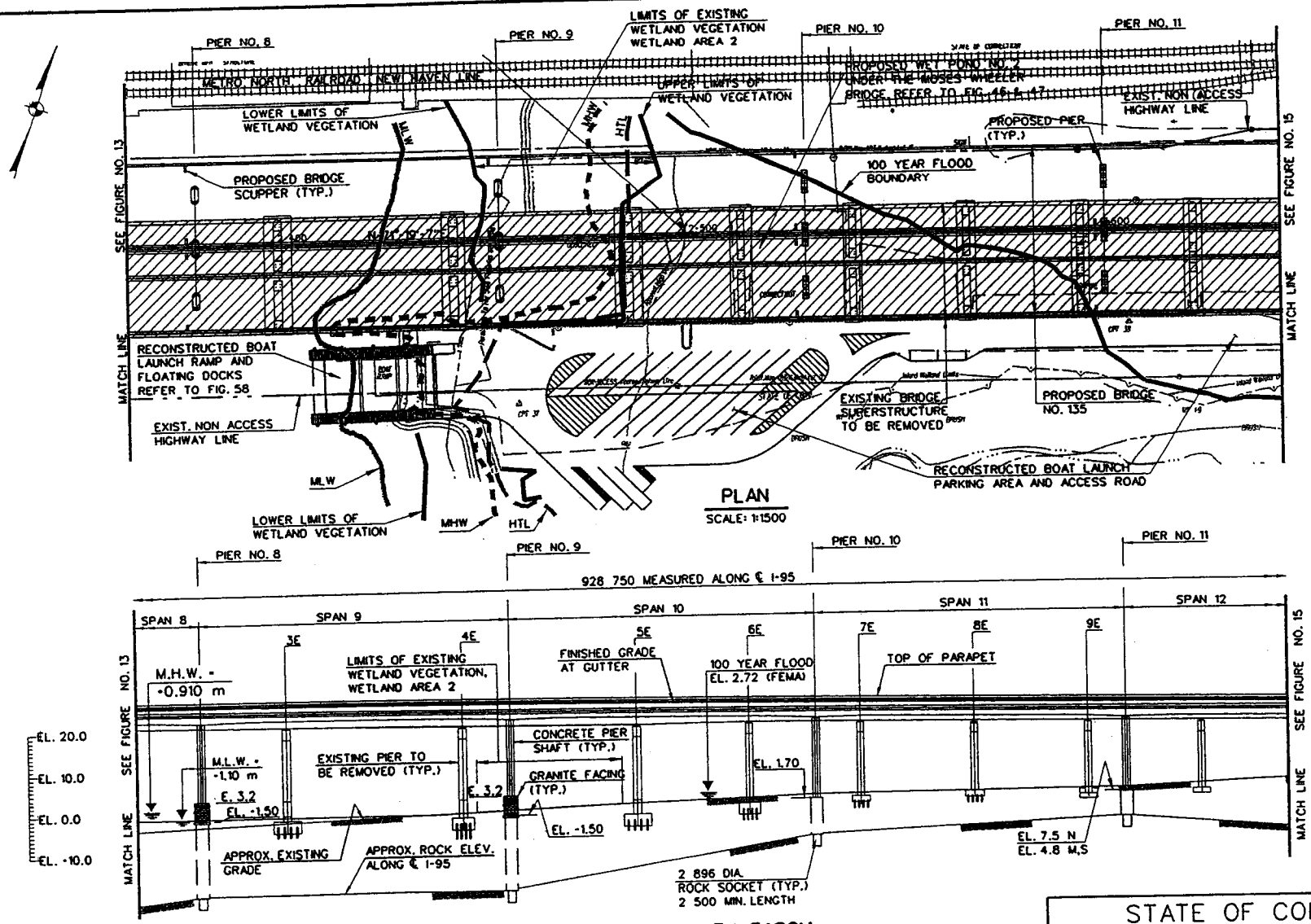
REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER PROJECT NO. 138-221

DATE: 11/22/06 | GENERAL BRIDGE PLAN | FIG. 13



WATER ELEVATIONS DATUM	NAVD 1988 (m)	NGVD 1929 (ft.)
MEAN LOW WATER	-1.10	-2.5
MEAN HIGH WATER	0.91	4.1
HIGH TIDE LINE	1.41	5.7
100 YEAR FLOOD ELEVATION	2.72	10

NOTE: PROJECT USES NAVD 1988 DATUM

LEGEND

- M.L.W — MEAN LOW WATER ELEVATION
- M.H.W — MEAN HIGH WATER ELEVATION
- HTL — HIGH TIDE LINE
- WETLAND VEGETATION LIMIT
- 100 YEAR FLOOD BOUNDARY
- 500 YEAR FLOOD BOUNDARY
- LIMITS OF EXISTING MOSES WHEELER BRIDGE

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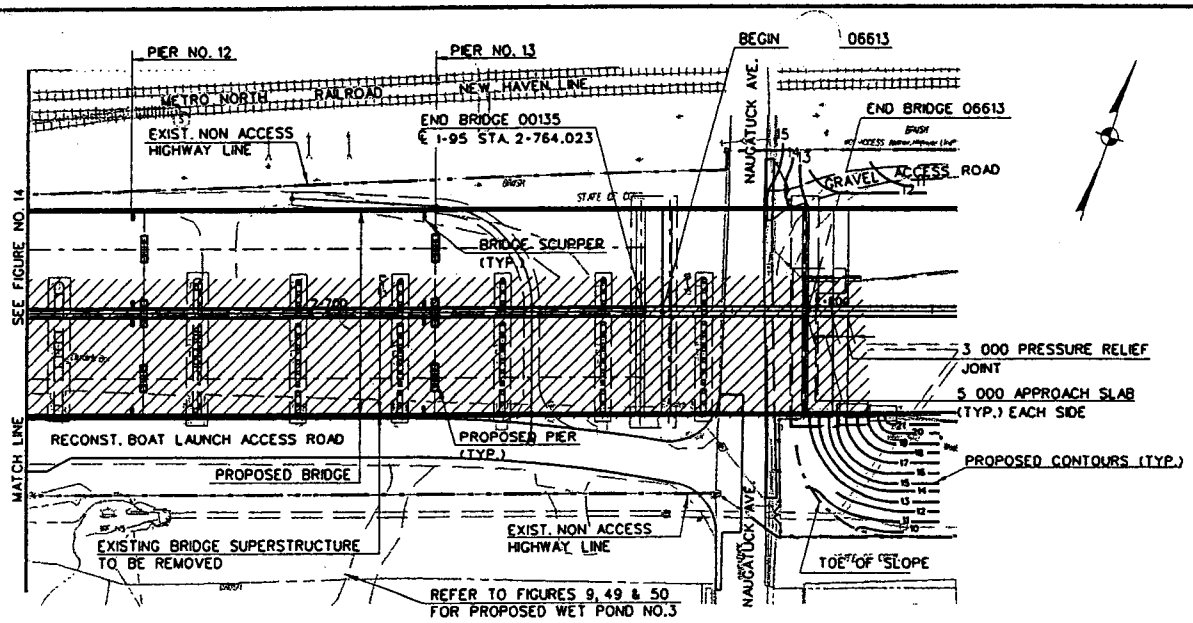
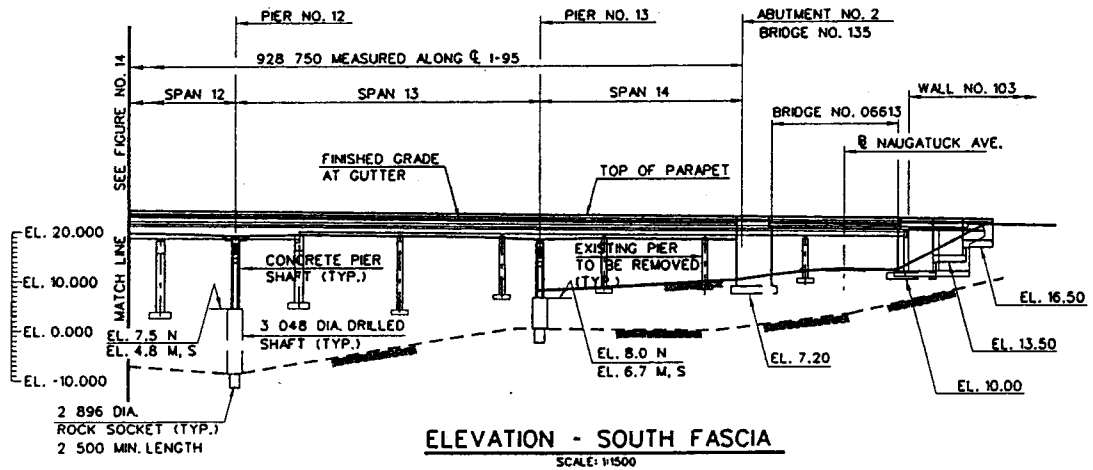
REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER PROJECT NO. 138-221

DATE: 11/22/06	GENERAL BRIDGE PLAN	FIG. 14



PLAN
SCALE: 1:1500



ELEVATION - SOUTH FASCIA
SCALE: 1:1500

LEGEND

LIMITS OF EXISTING MOSES WHEELER BRIDGE

WATER ELEVATIONS		
DATUM	NAVD 1988 (m)	NGVD 1929 (ft.)
MEAN LOW WATER	-1.15	-2.5
MEAN HIGH WATER	0.91	4.1
HIGH TIDE LINE	1.41	5.7
100 YEAR FLOOD ELEVATION	2.72	10

NOTE: PROJECT USES NAVD 1988 DATUM

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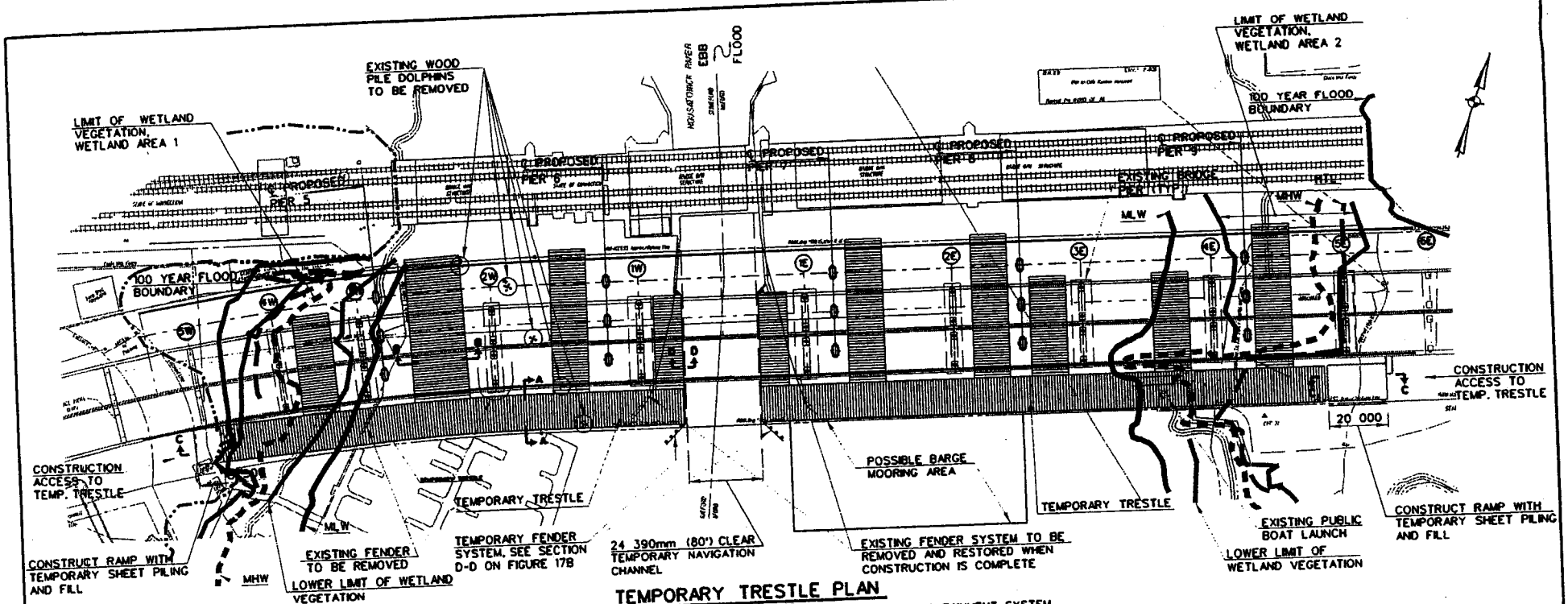
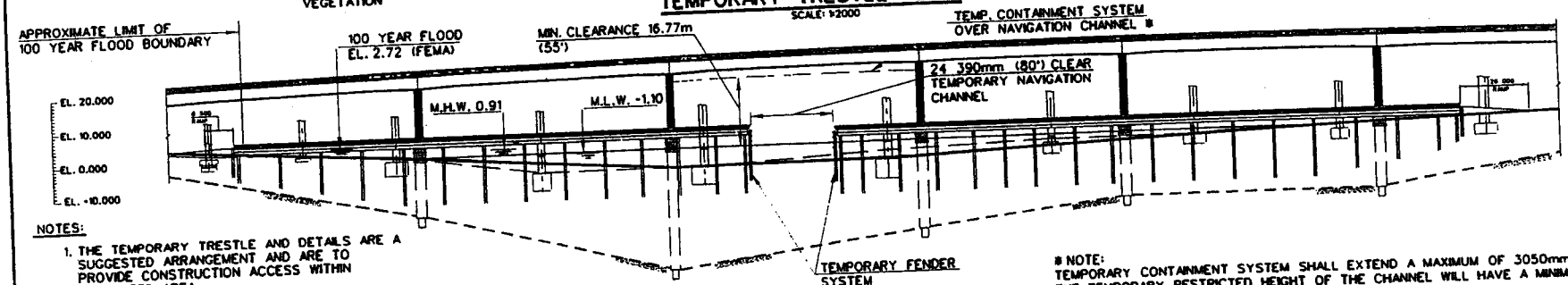
REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER PROJECT NO. 138-221

DATE: 11/11/05	GENERAL BRIDGE PLAN	FIG. 15



TEMPORARY TRESTLE PLAN

SCALE: 1:2000



TEMPORARY TRESTLE ELEVATION

SCALE: 1:2000

NOTES:

1. THE TEMPORARY TRESTLE AND DETAILS ARE A SUGGESTED ARRANGEMENT AND ARE TO PROVIDE CONSTRUCTION ACCESS WITHIN REGULATED AREA.
2. TEMPORARY TRESTLE AND DETAILS SHALL BE DESIGNED BY THE CONTRACTOR IN ACCORDANCE WITH THE AASHTO CONSTRUCTION HANDBOOK FOR BRIDGE TEMPORARY WORKS, 1995, TO SUIT HIS MEANS AND METHODS OF CONSTRUCTION.
3. BOTTOM OF TRESTLE ELEVATION SHALL BE AT OR ABOVE ELEV. 2.80 METERS.

WATER ELEVATIONS DATUM	NAVD 1988 (m)	NGVD 1929 (ft.)
MEAN LOW WATER	-1.10	-2.5
MEAN HIGH WATER	0.91	4.1
HIGH TIDE LINE	1.41	5.7
100 YEAR FLOOD ELEVATION	2.72	10

NOTE: PROJECT USES NAVD 1988 DATUM

LEGEND

- MLW — MEAN LOW WATER ELEVATION
- MHW — MEAN HIGH WATER ELEVATION
- HTL — HIGH TIDE LINE
- WETLAND VEGETATION LIMIT
- 100 YEAR FLOOD BOUNDARY
- 500 YEAR FLOOD BOUNDARY

(36) EXISTING BRIDGE PIER NUMBER

NOTE:
TEMPORARY CONTAINMENT SYSTEM SHALL EXTEND A MAXIMUM OF 3050mm (10') FROM BRIDGE. THE TEMPORARY RESTRICTED HEIGHT OF THE CHANNEL WILL HAVE A MINIMUM CLEARANCE OF 16 770mm (55') DURING CONSTRUCTION.

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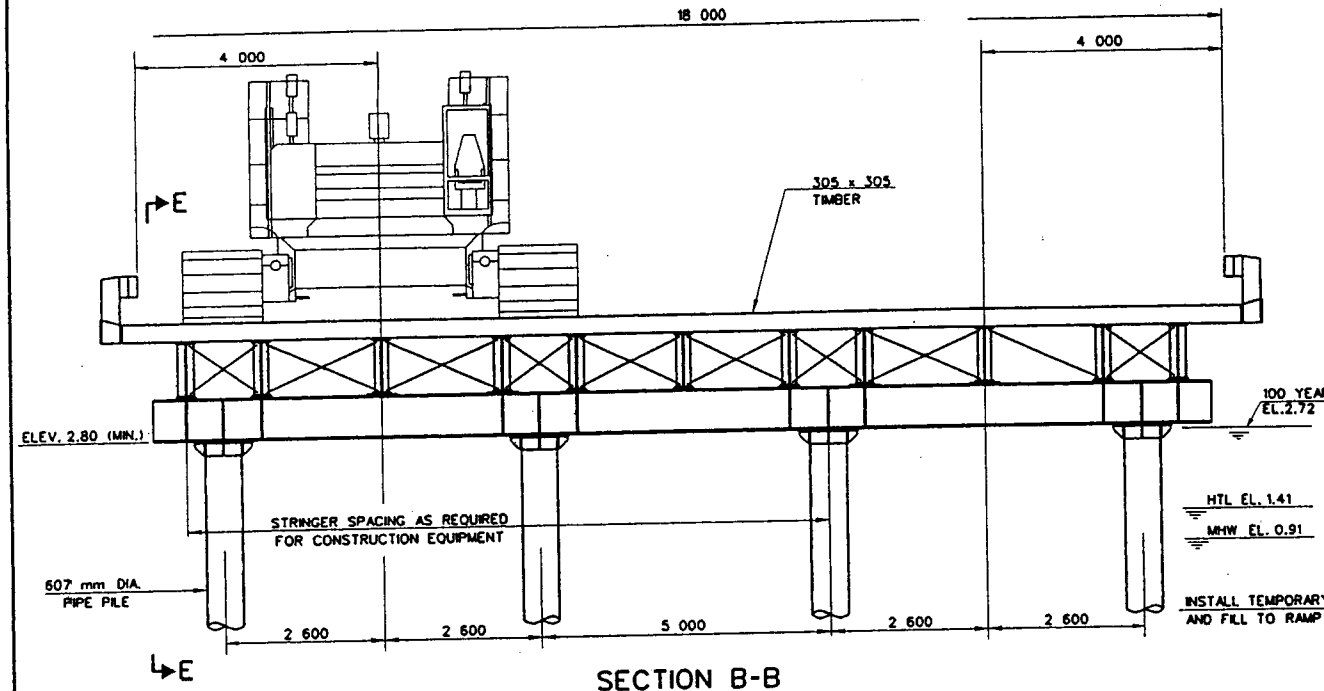
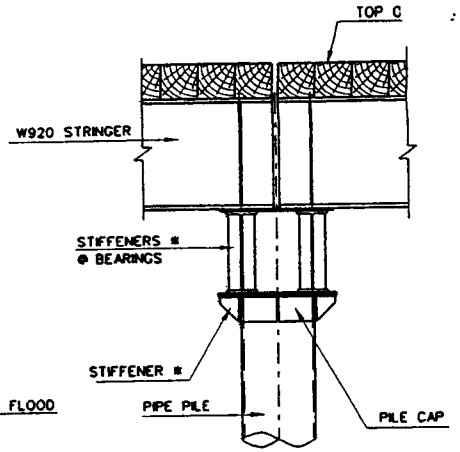
PROJECT NO. 138-221

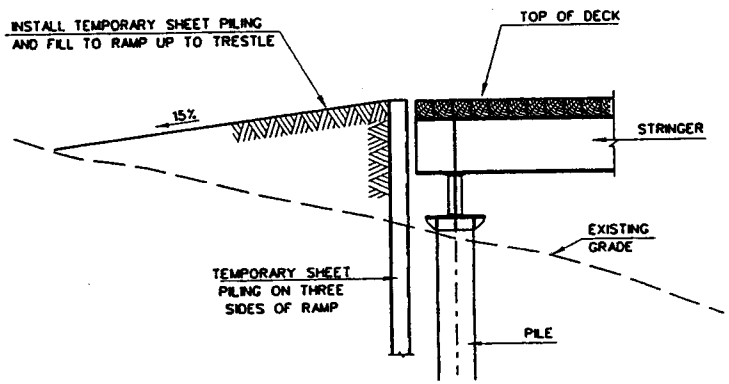
DATE: 11/22/06	TEMPORARY CONSTRUCTION TRESTLE	FIG. 16



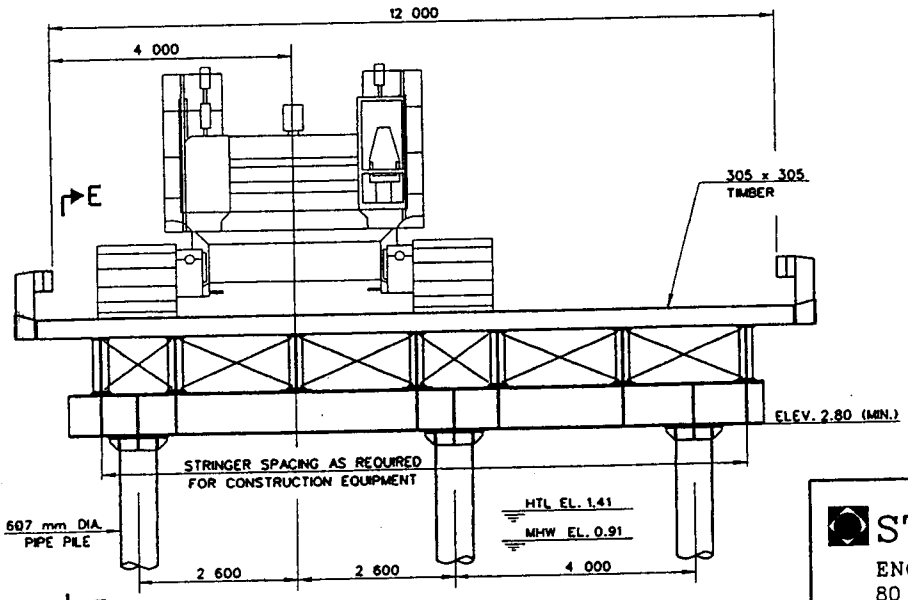
SECTION B-B
SCALE: 1:125



SECTION E-E
NTS



SECTION C-C
NTS



SECTION A-A
SCALE: 1:125

NOTE :
PROPOSED TEMPORARY RAMPS ARE LOCATED ABOVE THE HIGH TIDE LINE. ONLY THE RAMP IN MILFORD IS LOCATED WITHIN THE 100 YEAR FLOOD ZONE.

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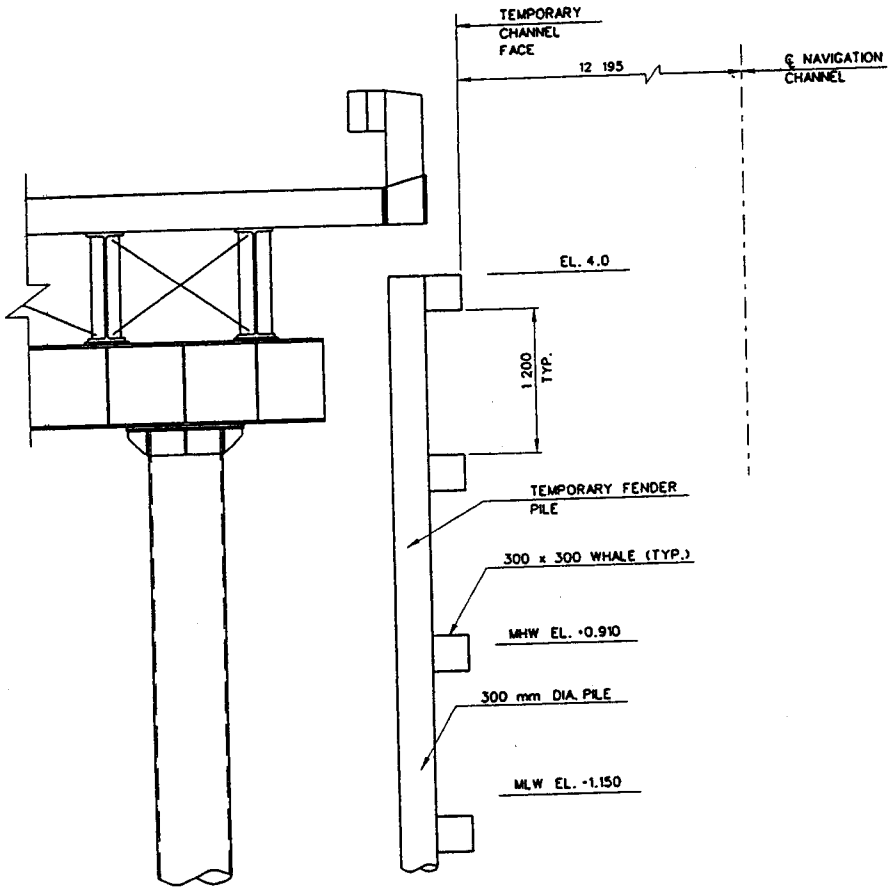
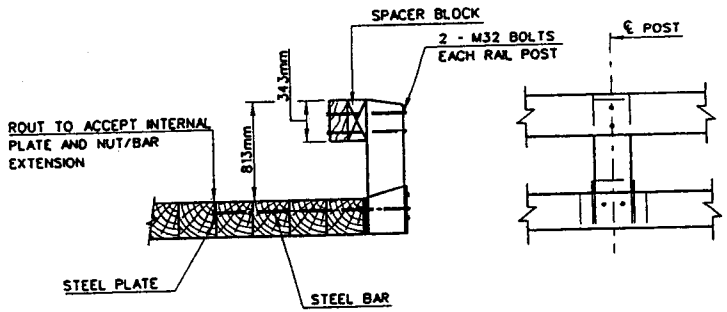
REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER PROJECT NO. 138-221

DATE: 11/11/05 | TEMPORARY TRESTLE DETAILS | FIG. 17A



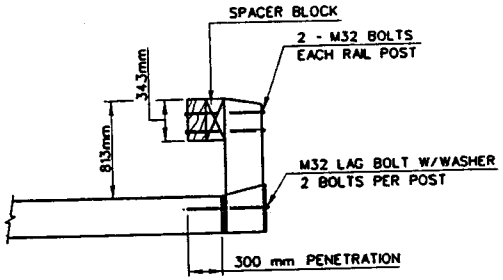
SECTION D-D

SCALE: 1:62.5



SECTION AT ENDS OF TRESTLE

FRONT VIEW



SECTION NORMAL TO ℄

RAILING DETAIL

SCALE: 1:62.5

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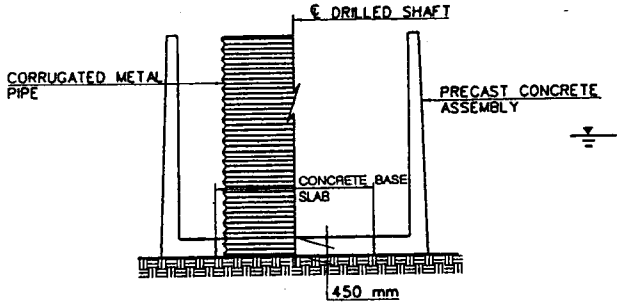
REPLACEMENT OF I-95 BRIDGE
OVER THE HOUSATONIC RIVER
PROJECT NO. 138-221

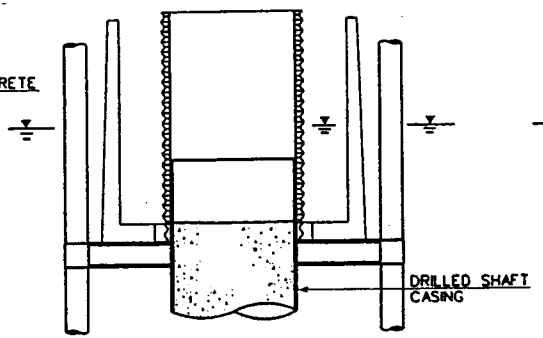
DATE: 11/11/05 | TEMPORARY TRESTLE DETAILS | FIG. 17B



STAGE 1

ERECT SIDE WALLS AND CORRUGATED MULTI-PLATE PIPES AT CASTING SITE.
PLACE INSERTS AND REINFORCING, AND CAST CONCRETE BASE SLAB. REMOVE TO PROJECT SITE.

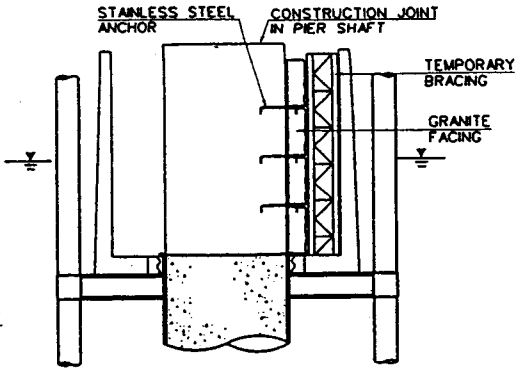
STAGE 1



STAGE 3

WITH THE PRECAST ASSEMBLY AS A TEMPLATE PLACE DRILLED SHAFT CASING THROUGH CORRUGATED PIPE. CONSTRUCT DRILL SHAFT, AND PLACE REINFORCING CAGE AND CONCRETE ACCORDING TO FOUNDATION REQ. TOP OF SHAFT CONCRETE SHOULD NOT EXTEND MORE THAN 75mm ABOVE BASE SLAB.

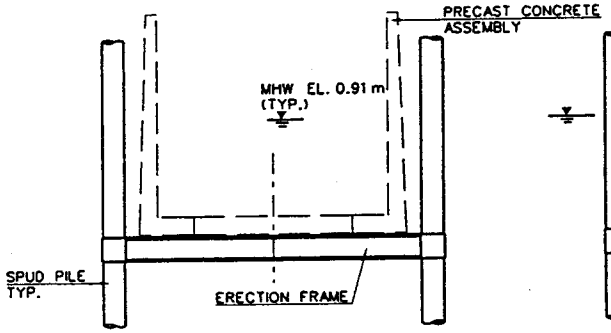
STAGE 3



STAGE 5

DE-WATER ASSEMBLY, CUT AND REMOVE CASING AT TOP OF SHAFT CONCRETE CONSTRUCT GRANITE FACING.

STAGE 5



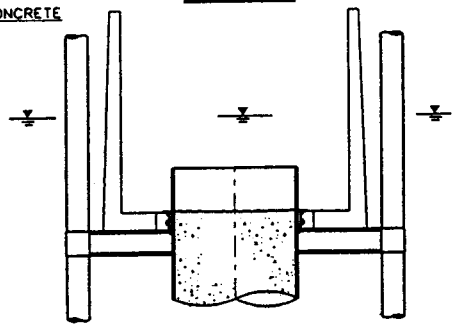
STAGE 2

1. DRIVE SPUD PILES AND CONSTRUCT ERECTION FRAME.

2. TOW ASSEMBLY TO PIER SITE AND POSITION ABOVE ERECTION FRAME

3. MAINTAINING ACCURATE POSITION, FLOOD ASSEMBLY TO LAND ON ERECTION FRAME. SECURE ASSEMBLY TO ERECTION FRAME.

STAGE 2

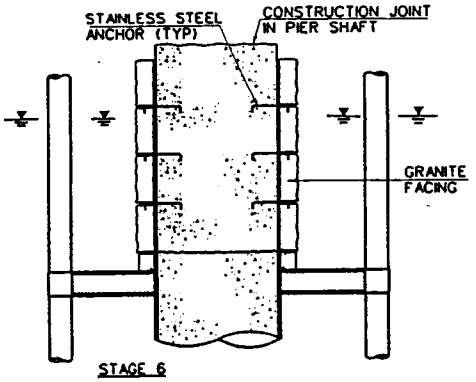


STAGE 4

CUT CORRUGATED PIPE FLUSH WITH TOP OF BASE SLAB. REMOVE REMNANT. PLACE GROUT TO FILL THE ANNULAR SPACE BETWEEN THE CASING AND BOTTOM SLAB OF THE ASSEMBLY. THE CONTRACTOR SHALL HAND PLACE THE GROUT CAREFULLY TO AVOID SPILLAGE TO RIVER.

TEMPORARILY RESTRAIN PRECAST CONCRETE ASSEMBLY TO RESIST ACCIDENTAL UPLIFT.

STAGE 4



STAGE 6

COMPLETE CONSTRUCTION OF GRANITE FACING. FLOOD ASSEMBLY. DISMANTLE AND REMOVE ASSEMBLY REMOVE SPUD PILES AND ERECTION FRAME

STAGE 6

NOT TO SCALE

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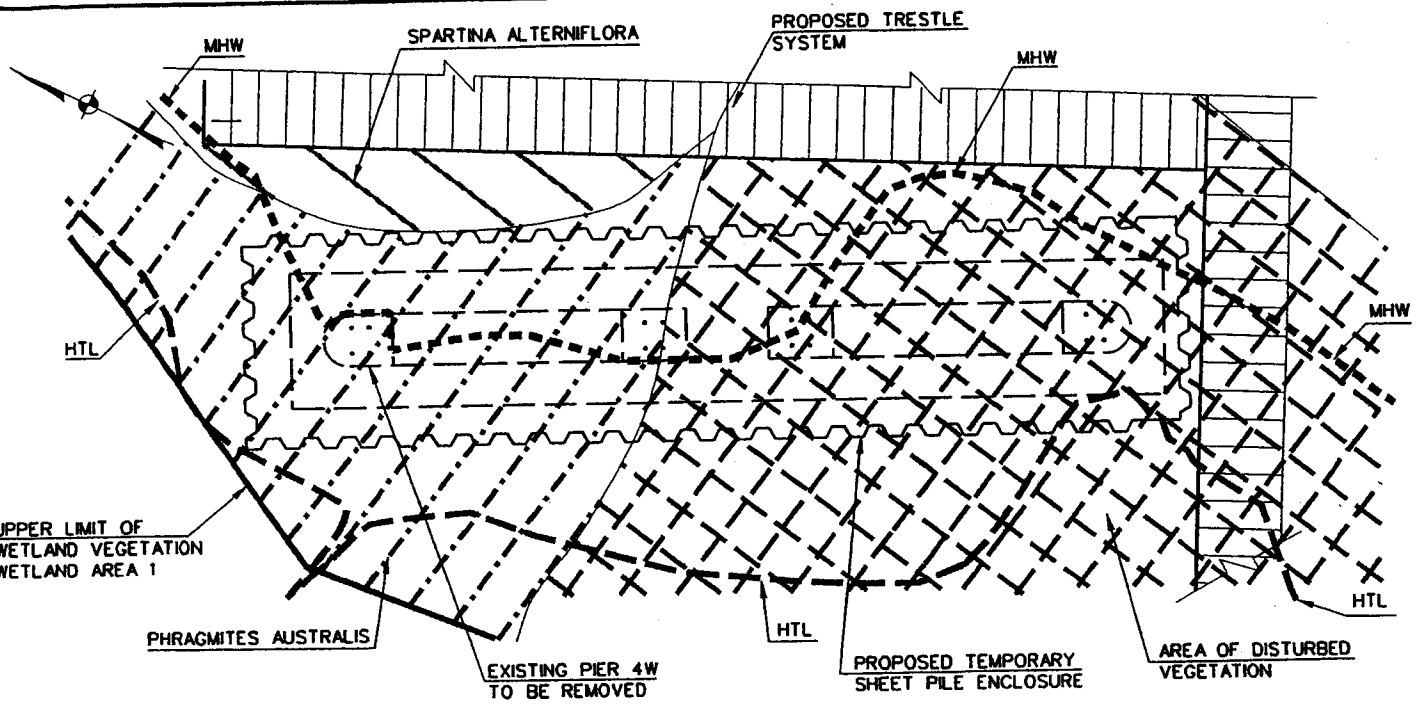
REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER PROJECT NO. 138-221

DATE: 11/11/05

TEMPORARY FOUNDATION SEAL DETAIL

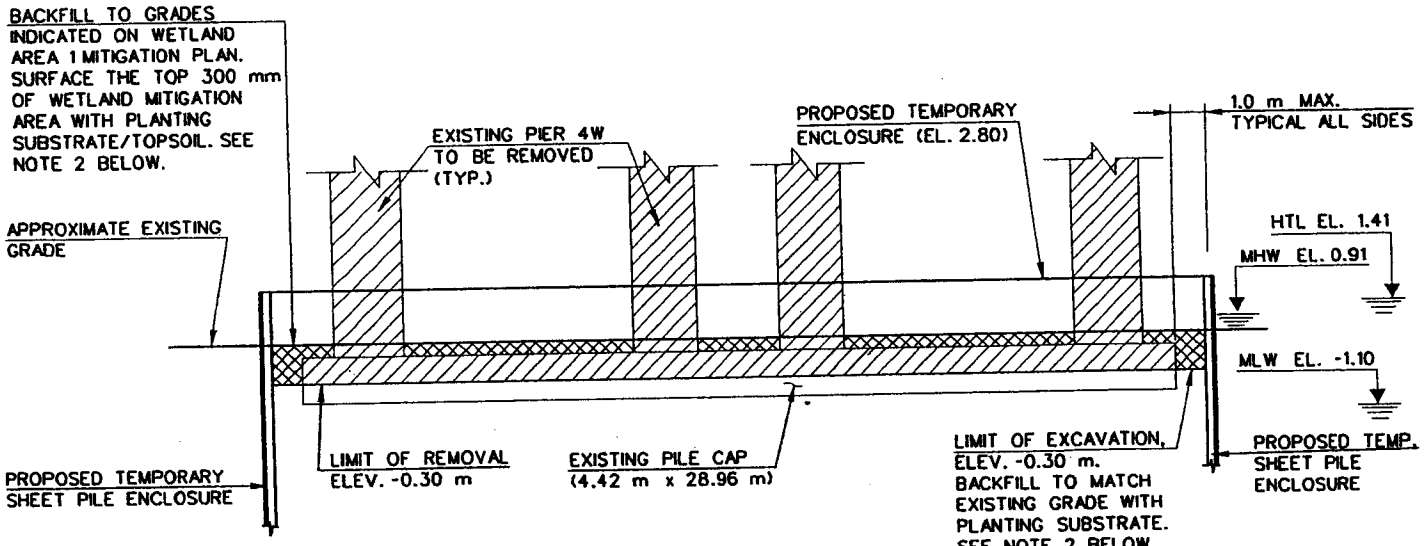
FIG. 18



PIER PLAN

SCALE: 1:250

PIER 4W IS LOCATED IN WETLAND MITIGATION AREA IN WETLAND AREA 1. REFER TO FIGURES 57A AND 57B FOR PROPOSED GRADES IN THIS AREA.



ELEVATION

SCALE: 1:250

LEGEND

LIMIT OF REMOVAL OF EXISTING PIER AND PILE CAP

LIMIT OF EXCAVATION AND BACKFILL

NOTES:

1. REFER TO FIG. 13 FOR SITE VICINITY PLAN AND FIG. VS-1 FOR VEGETATION SKETCH.
2. THE WETLAND MITIGATION AREA SHALL BE SURFACED WITH PLANTING SUBSTRATE/TOPSOIL. PLANTING SUBSTRATE/TOPSOIL IS A NATURAL OR MANMADE MATERIAL WHICH CONSISTS OF SOILS CONTAINING NOT LESS THAN 75% SAND BY WEIGHT AND AN ORGANIC CONTENT OF NOT LESS THAN 10% AND NOT MORE THAN 15%.

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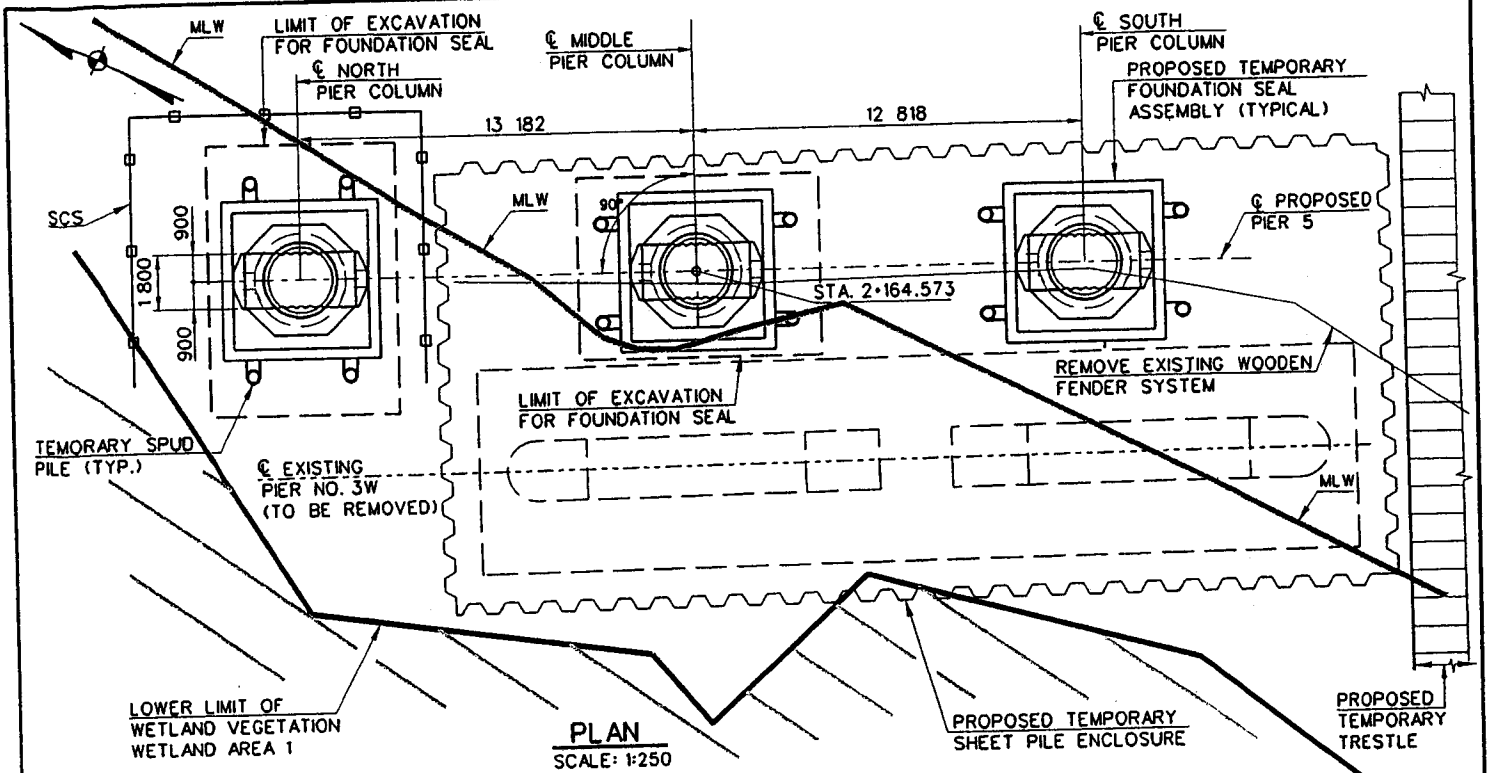
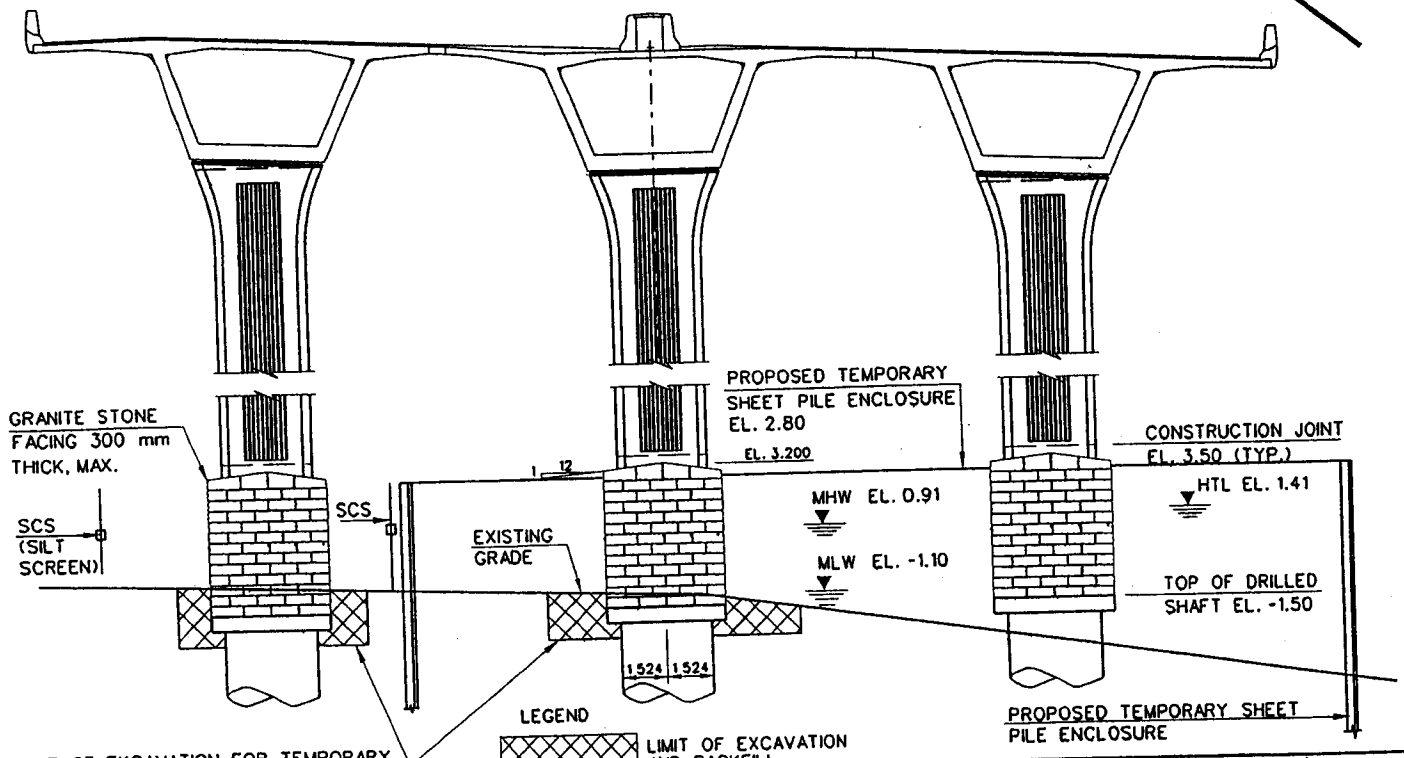
REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER
PROJECT NO. 138-221

DATE: 11/22/06	PIER 4W - PLAN	FIG. 19



PLAN
SCALE: 1:250



ELEVATION
SCALE: 1:250

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NOTES:
1. REFER TO FIG. 13 FOR SITE VICINITY PLAN AND FIG. VS-1 FOR VEGETATION SKETCH.
2. BACKFILL THE TOP 1 METER TO RESTORE MUDLINE IN RIVER WITH "STRUCTURAL SOIL". "STRUCTRUAL SOIL" IS SANDY LOAM, INCLUDING COARSE, FINE AND VERY FINE SANDY LOAM TO APPROXIMATE THE TEXTURAL CLASS OF EXISTING SOIL REMOVED FROM THIS AREA. BACKFILL EXCAVATIONS BELOW 1 METER WITH GRANULAR FILL.

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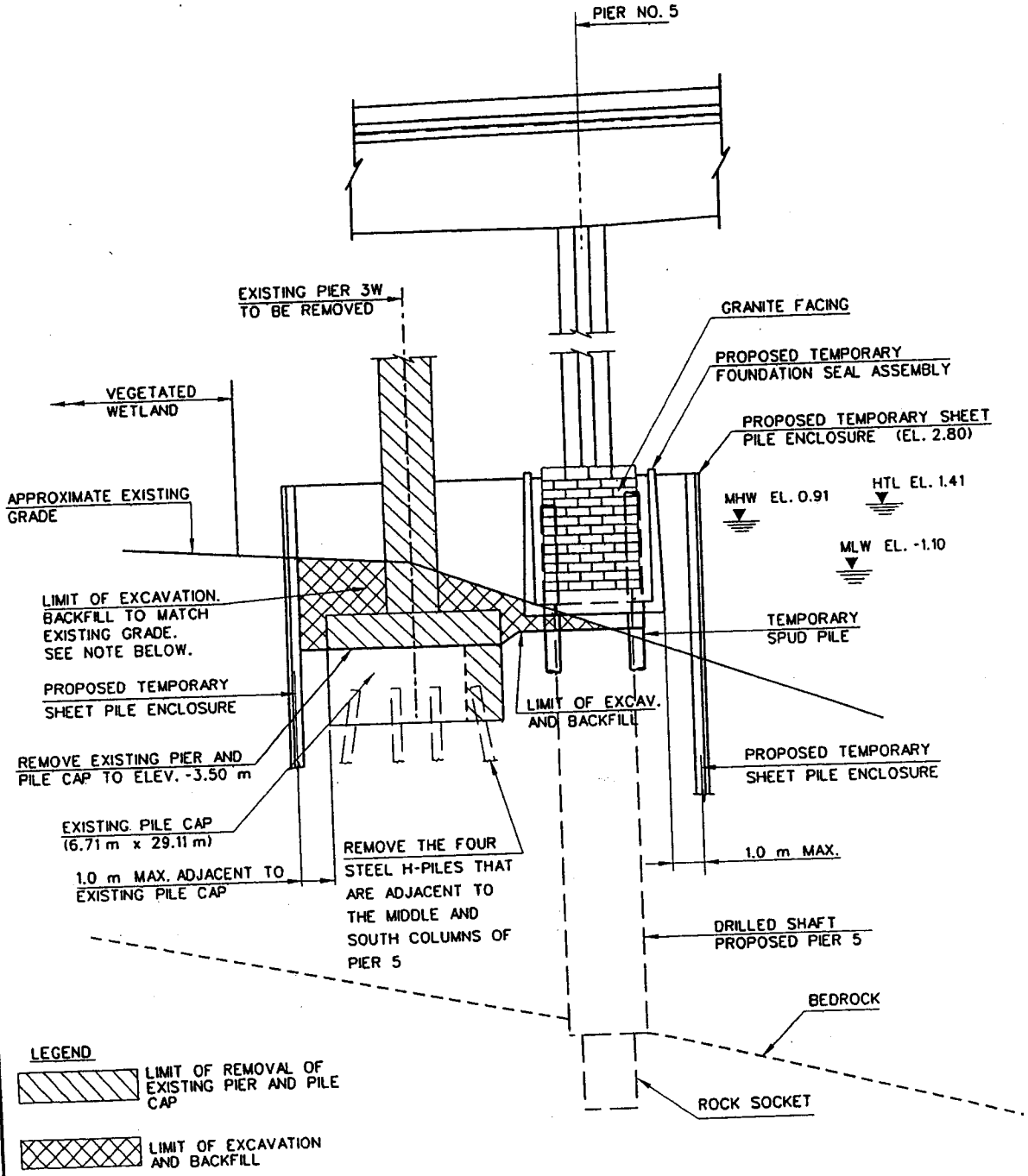
DATE: 11/22/06 | PIER 5 AND PIER 3W | FIG. 20



SIDE ELEVATION

SCALE: 1:250

NOTES:

1. REFER TO FIGURE 20 FOR PLAN VIEW.
2. BACKFILL THE TOP 1 METER TO RESTORE MUDLINE IN RIVER WITH "STRUCTURAL SOIL". "STRUCTURAL SOIL" IS SANDY LOAM, INCLUDING COARSE, FINE AND VERY FINE SANDY LOAM TO APPROXIMATE THE TEXTURAL CLASS OF THE EXISTING SOIL REMOVED FROM THIS AREA. BACKFILL EXCAVATION BELOW THE TOP 1 METER WITH GRANULAR FILL.

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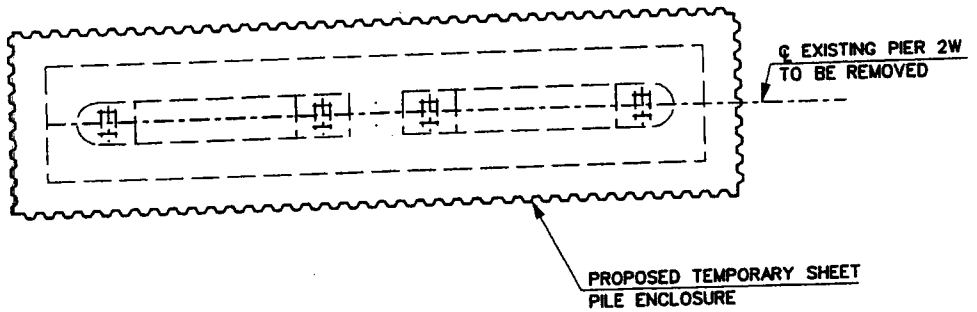
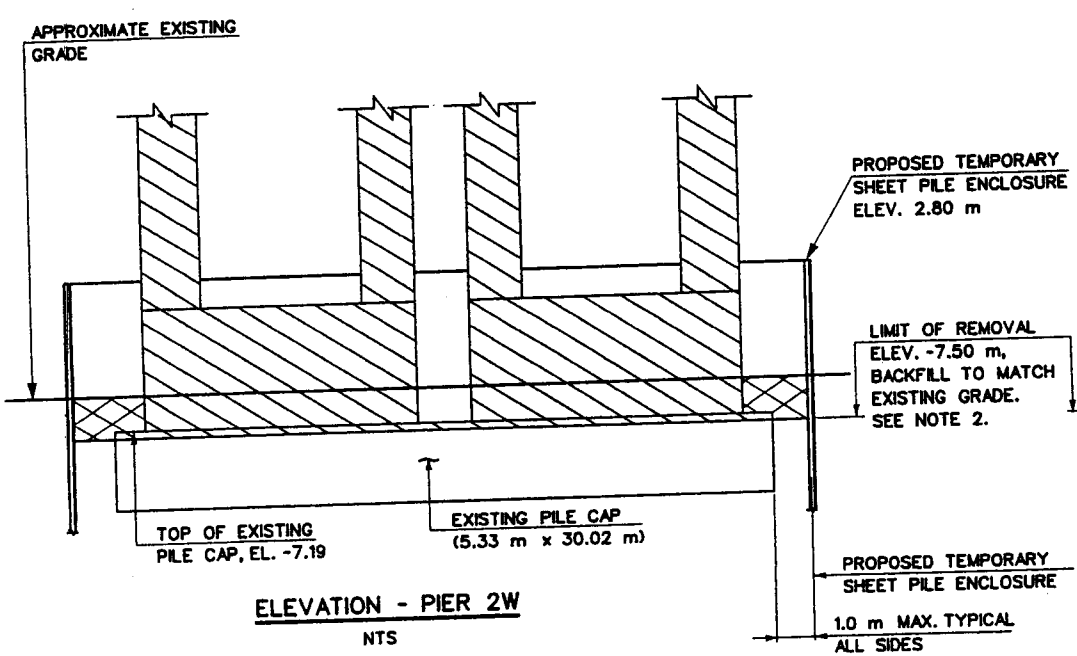
DATE: 11/22/06 | PIER 5 AND PIER 3W | FIG. 21

NOTES:

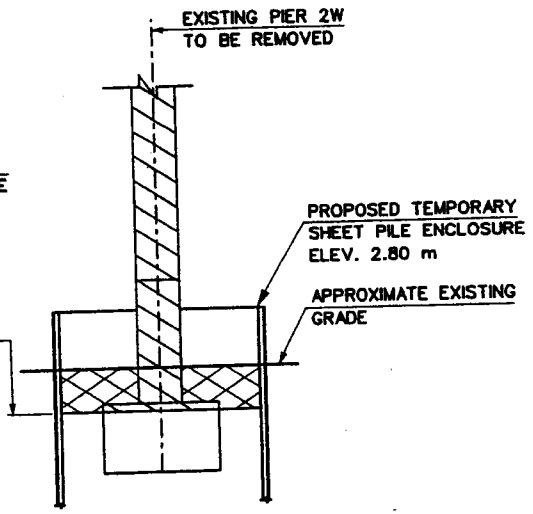
1. REFER TO FIG. 13 FOR SITE VICINITY PLAN. PIER 2W IS LOCATED IN OPEN WATER.
2. BACKFILL THE TOP 1 METER TO RESTORE MUDLINE IN RIVER WITH "STRUCTURAL SOIL". "STRUCTURAL SOIL" IS SANDY LOAM, INCLUDING COARSE, FINE AND VERY FINE SANDY LOAM TO APPROXIMATE THE TEXTURAL CLASS OF THE EXISTING SOIL REMOVED FROM THIS AREA. BACKFILL EXCAVATIONS BELOW A DEPTH OF 1 METER WITH GRANULAR FILL.



PLAN - PIER 2W
NTS



ELEVATION - PIER 2W
NTS



SIDE ELEVATION - PIER 2W
NTS

LEGEND

LIMIT OF REMOVAL OF EXISTING PIER AND PILE CAP

LIMIT OF EXCAVATION AND BACKFILL

WATER ELEVATIONS DATUM	NAVD 1988 (m)	NGVD 1929 (ft.)
MEAN LOW WATER	-1.10	-2.5
MEAN HIGH WATER	0.91	4.1
HIGH TIDE LINE	1.41	5.7
100 YEAR FLOOD ELEVATION	2.72	10.0

NOTE: PROJECT USES NAVD 1988 DATUM

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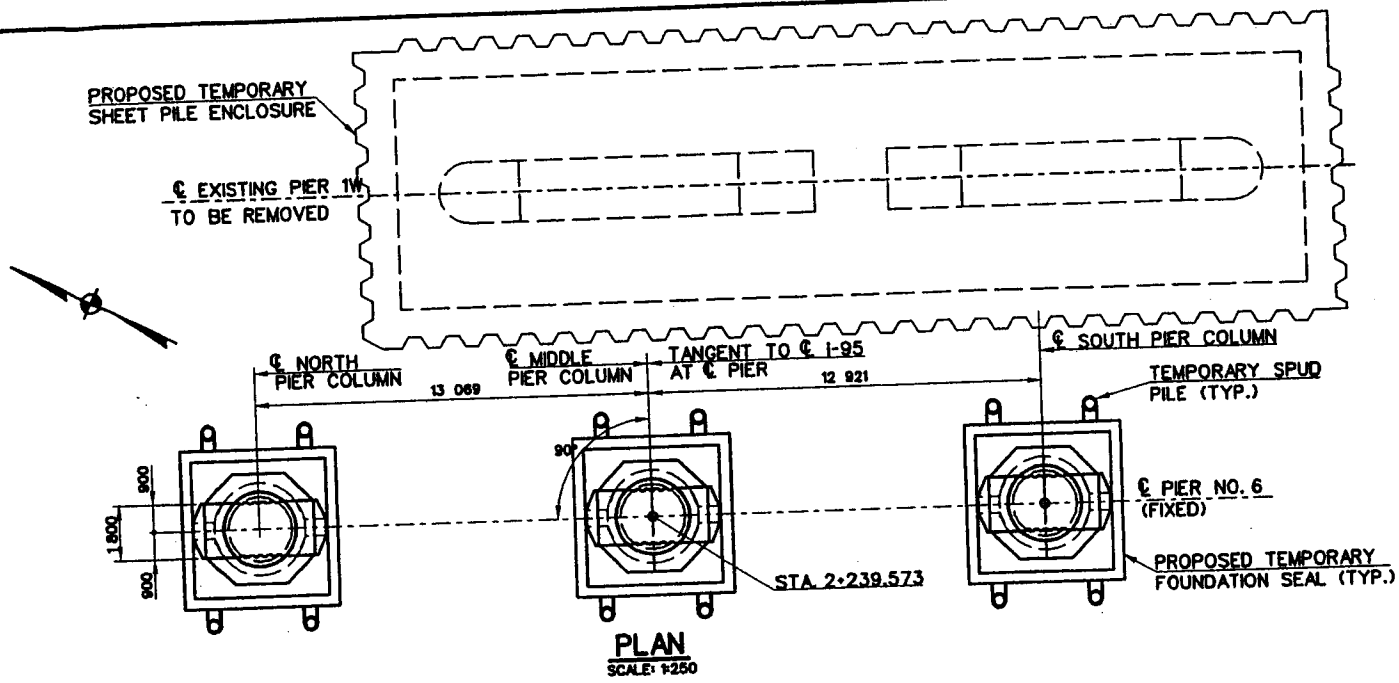
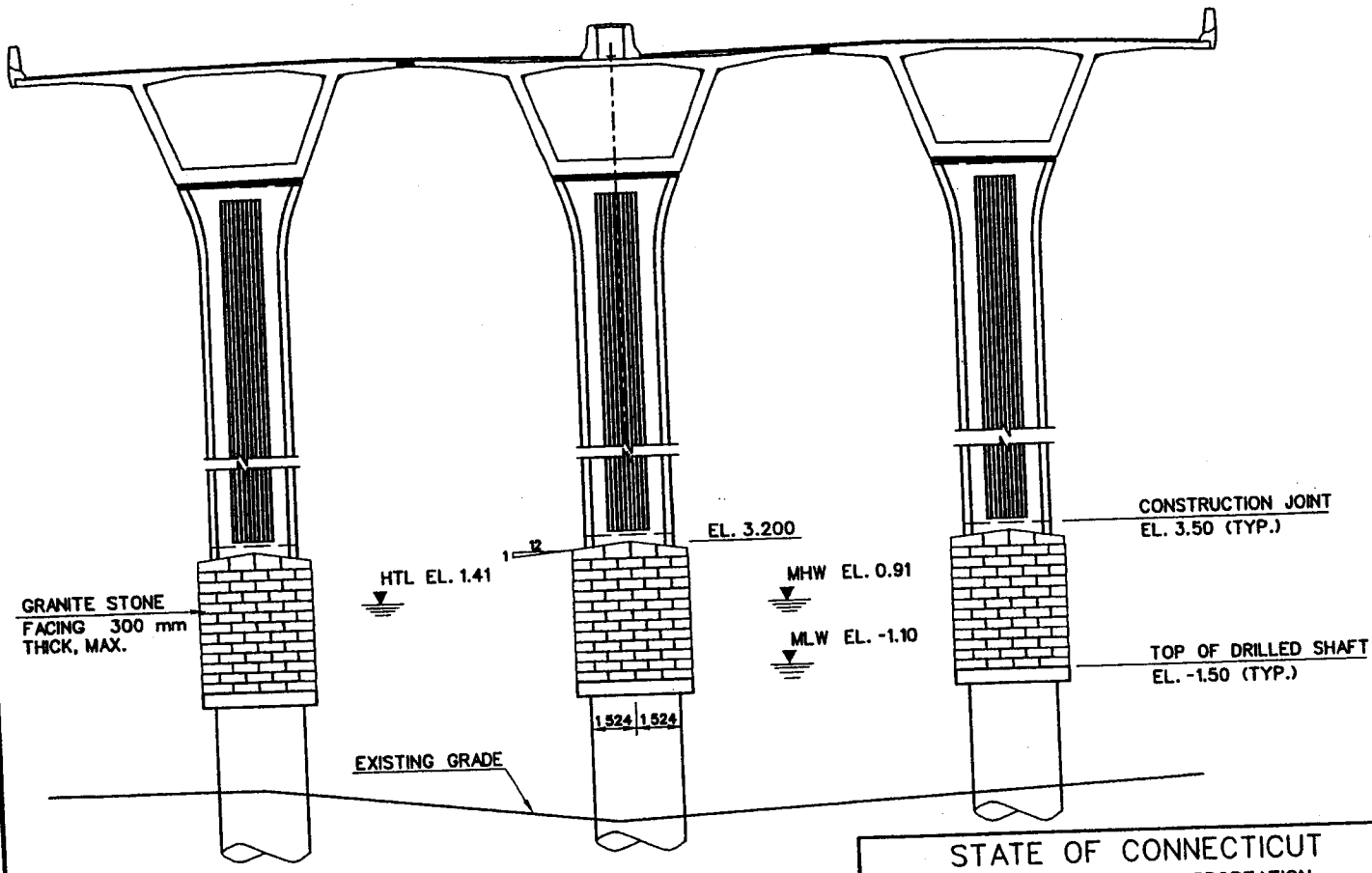
PROJECT NO. 138-221

DATE: 11/22/06 | DEMOLITION, PIER 2W | FIG. 22



PLAN
SCALE: 1:250



ELEVATION
SCALE: 1:250

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NOTE:
REFER TO FIG. 13 FOR SITE VICINITY PLAN. PIER 1W AND PIER 6 ARE LOCATED IN OPEN WATER.

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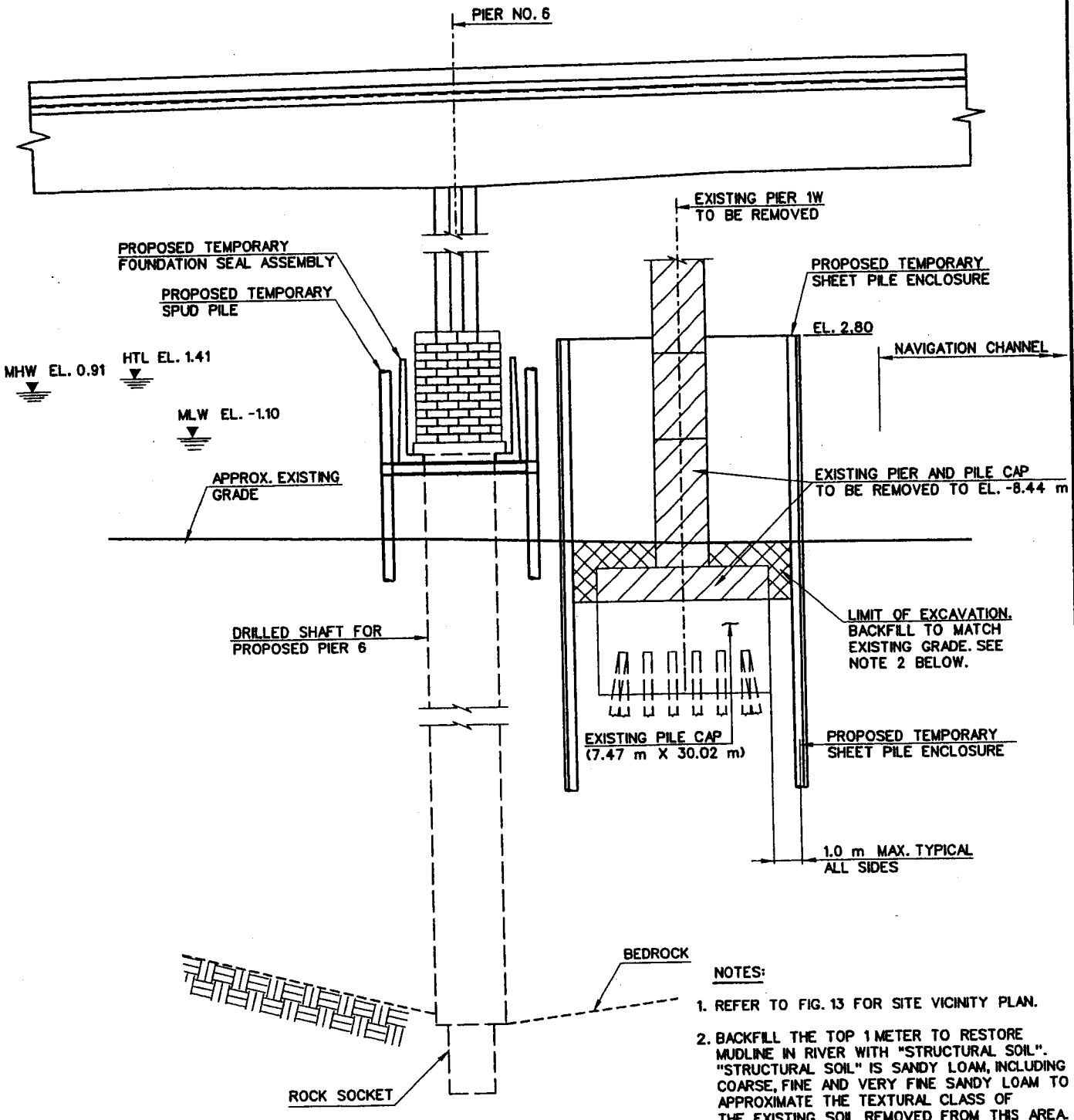
DATE: 11/22/06	PIER 6 AND PIER 1W	FIG. 23



NOTES:

1. REFER TO FIG. 13 FOR SITE VICINITY PLAN.
2. BACKFILL THE TOP 1 METER TO RESTORE MUDLINE IN RIVER WITH "STRUCTURAL SOIL". "STRUCTURAL SOIL" IS SANDY LOAM, INCLUDING COARSE, FINE AND VERY FINE SANDY LOAM TO APPROXIMATE THE TEXTURAL CLASS OF THE EXISTING SOIL REMOVED FROM THIS AREA. BACKFILL EXCAVATIONS BELOW A DEPTH OF 1 METER WITH GRANULAR FILL.

LEGEND

LIMIT OF REMOVAL OF EXISTING PIER AND PILE CAP

LIMIT OF EXCAVATION AND BACKFILL

SIDE ELEVATION

SCALE: 1:250

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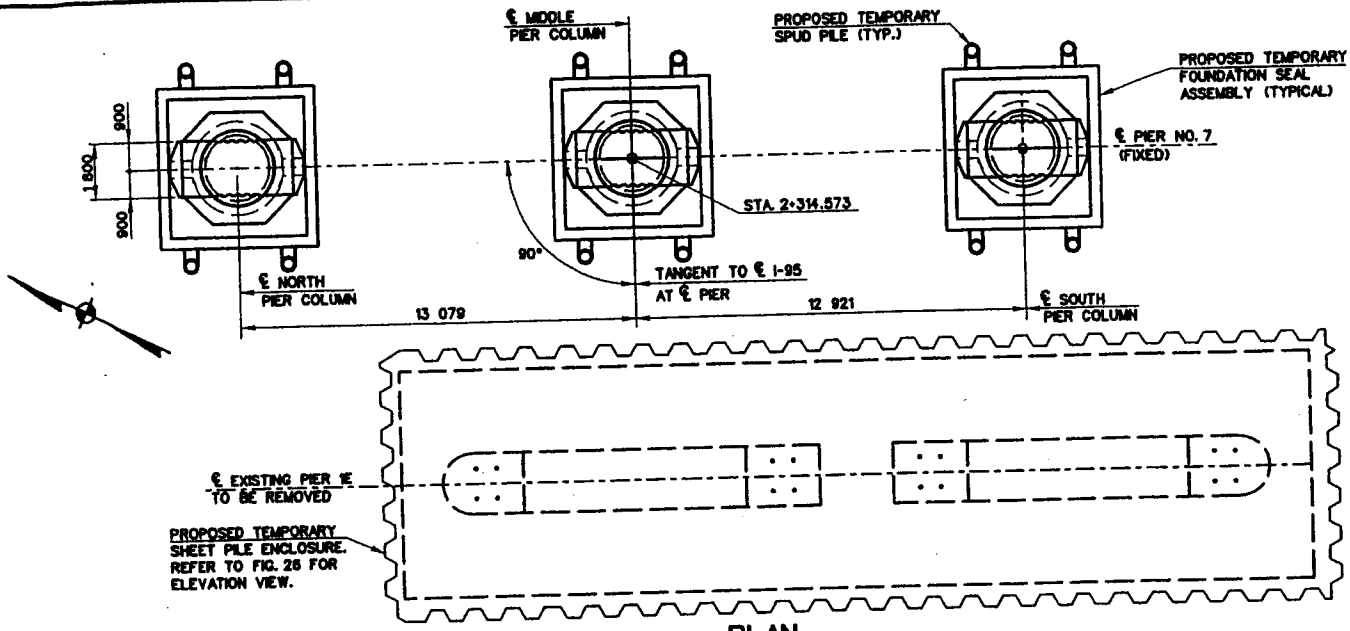
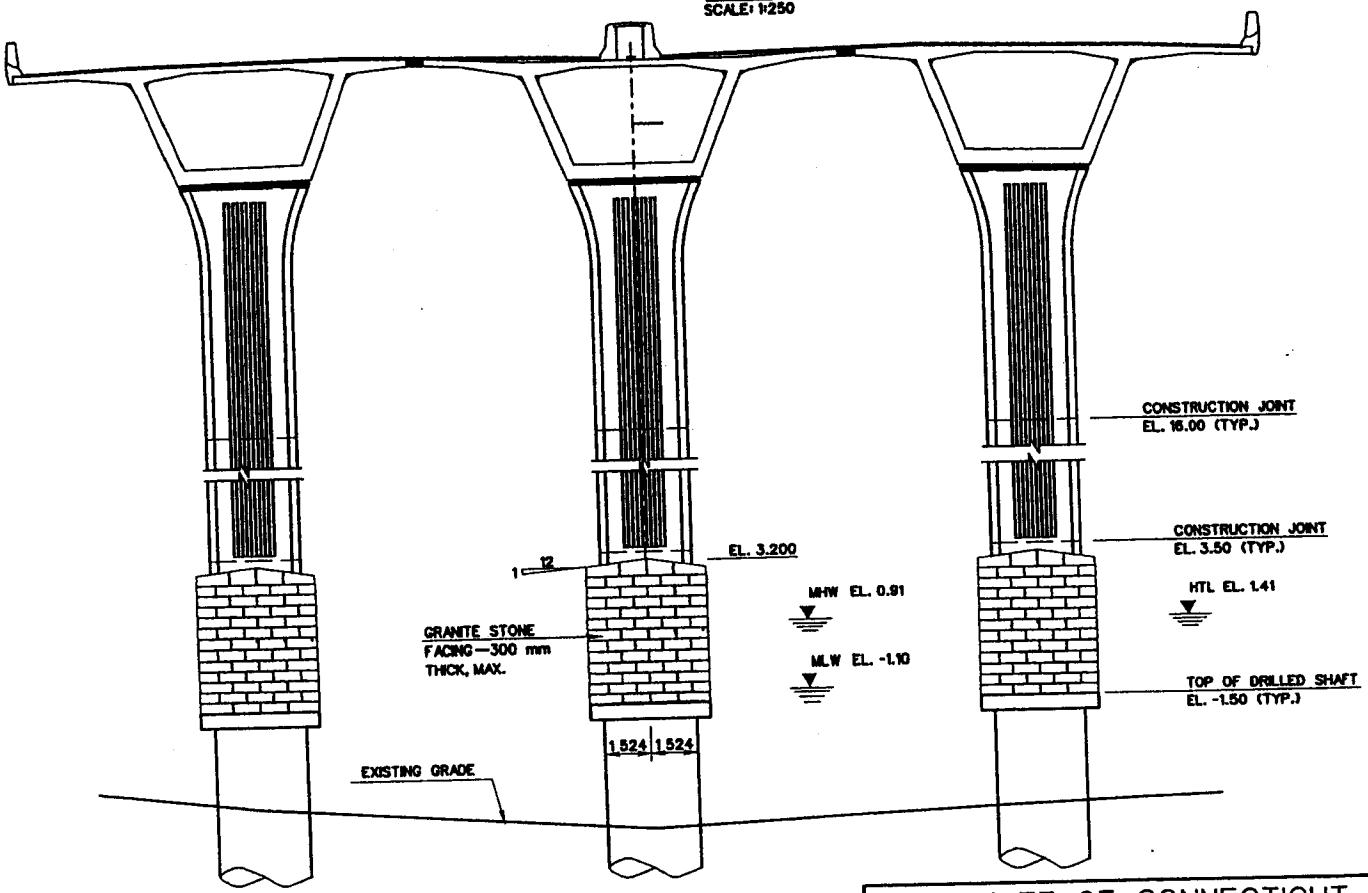
DATE: 11/22/06	PIER 6 AND PIER 1W	FIG. 24



PLAN
SCALE: 1:250



ELEVATION
SCALE: 1:250

NOTE:
REFER TO FIG. 13 FOR SITE VICINITY PLAN.
PIER 7 AND EXISTING PIER 1E ARE LOCATED IN OPEN WATER.

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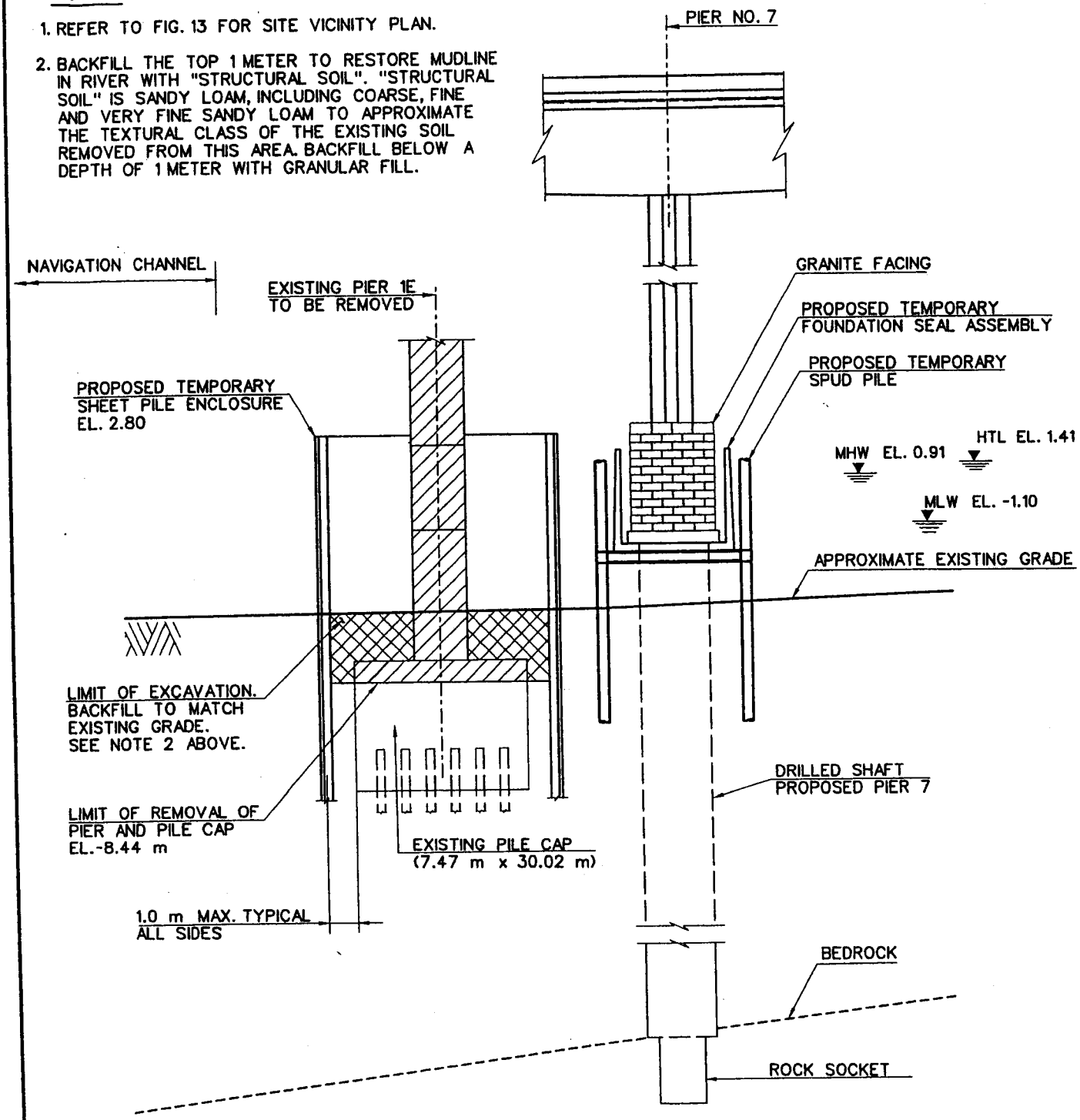
DATE: 11/22/06	PIER 7 AND PIER 1E	FIG. 25

NOTES:

1. REFER TO FIG. 13 FOR SITE VICINITY PLAN.
2. BACKFILL THE TOP 1 METER TO RESTORE MUDLINE IN RIVER WITH "STRUCTURAL SOIL". "STRUCTURAL SOIL" IS SANDY LOAM, INCLUDING COARSE, FINE AND VERY FINE SANDY LOAM TO APPROXIMATE THE TEXTURAL CLASS OF THE EXISTING SOIL REMOVED FROM THIS AREA. BACKFILL BELOW A DEPTH OF 1 METER WITH GRANULAR FILL.



SIDE ELEVATION

SCALE 1:250

LEGEND

- LIMIT OF REMOVAL OF EXISTING PIER AND PILE CAP
- LIMIT OF EXCAVATION AND BACKFILL

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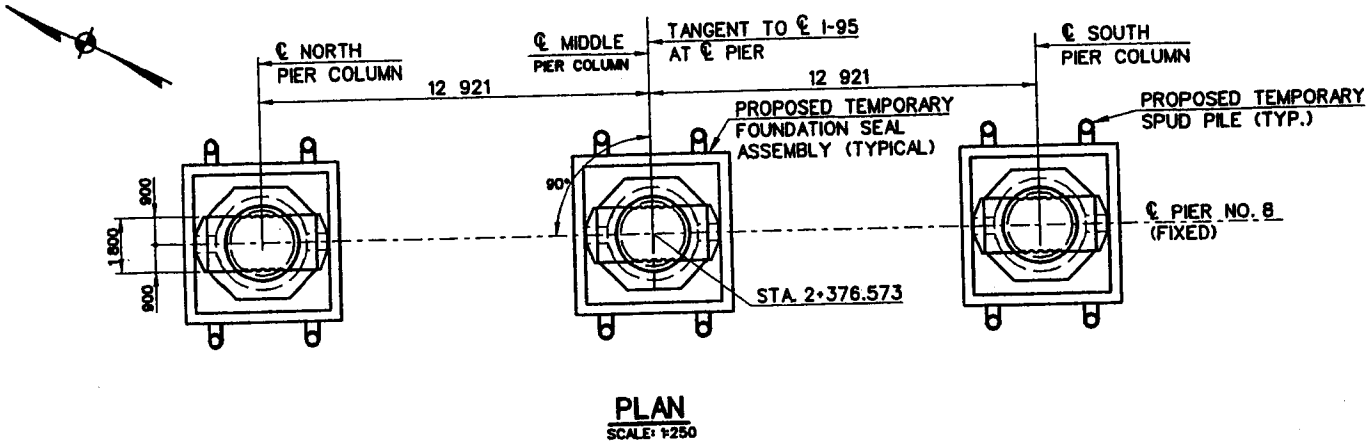
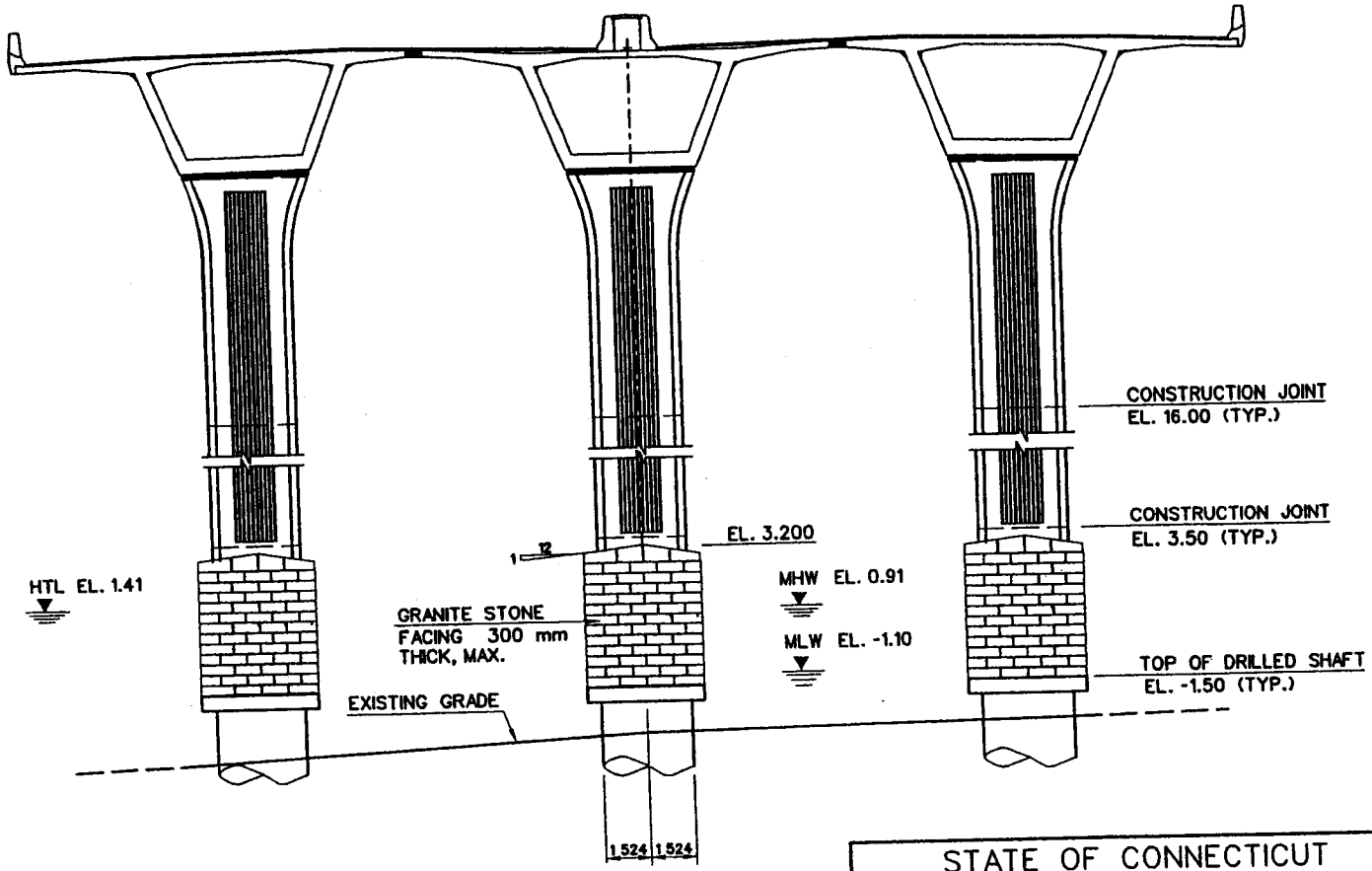
REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER
PROJECT NO. 138-221

DATE: 11/22/06	PIER 7 AND PIER 1E	FIG. 26



PLAN
SCALE: 1:250



ELEVATION
SCALE: 1:250

NOTE:
REFER TO FIG. 14 FOR SITE VICINITY PLAN.
PIER 8 IS LOCATED IN OPEN WATER.

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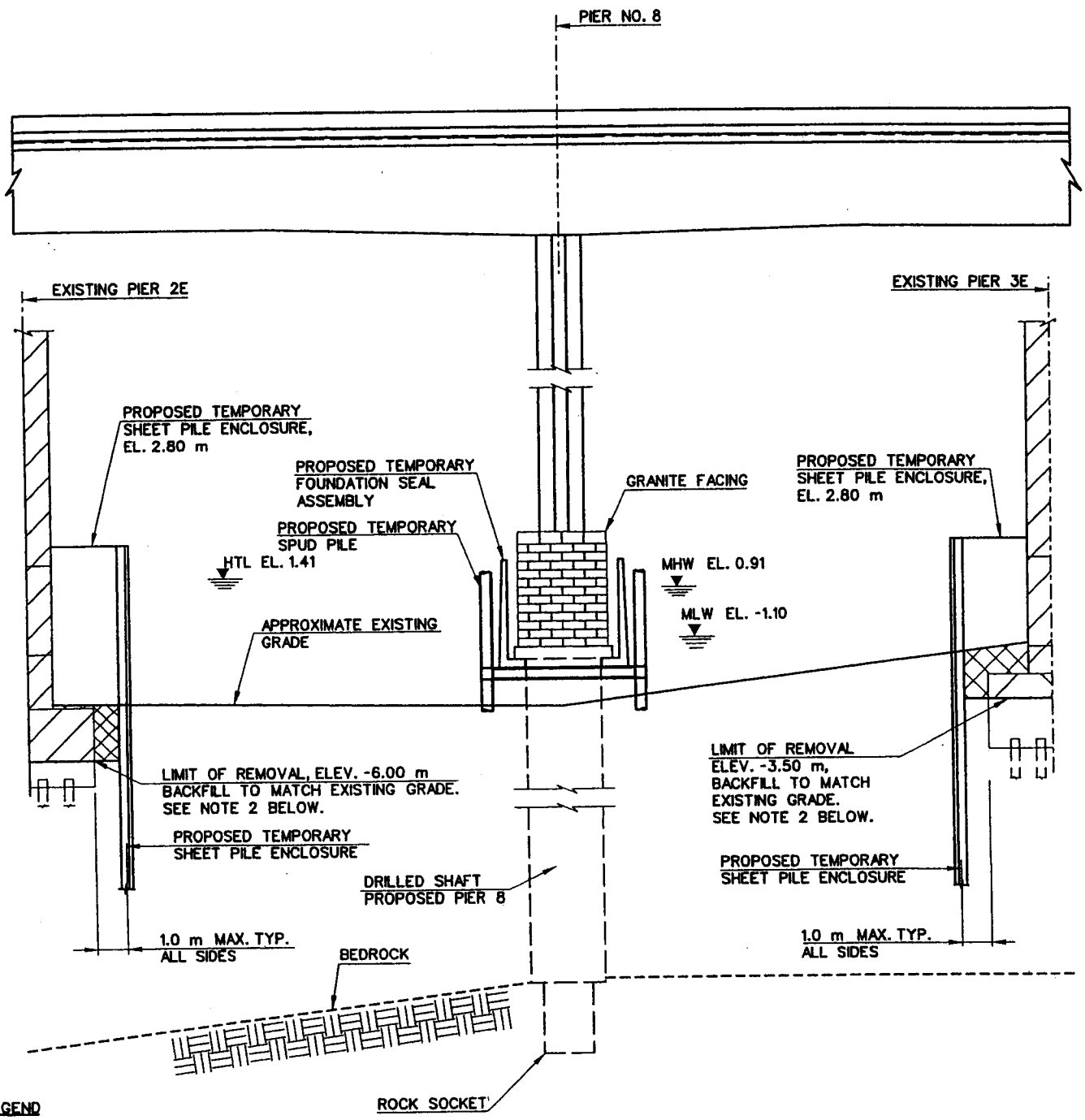
PROJECT NO. 138-221

DATE: 11/22/06 | PIER 8 | FIG. 27



LEGEND

LIMIT OF REMOVAL OF EXISTING PIER AND PILE CAP

LIMIT OF EXCAVATION AND BACKFILL

SIDE ELEVATION

SCALE: 1:250

NOTES:

1. REFER TO FIG. 13 AND FIG. 14 FOR SITE VICINITY PLAN.
2. BACKFILL THE TOP 1 METER TO RESTORE MUDLINE IN RIVER WITH "STRUCTURAL SOIL". "STRUCTURAL SOIL" IS A SANDY LOAM, INCLUDING COARSE, FINE AND VERY FINE SANDY LOAM TO APPROXIMATE THE TEXTURAL CLASS OF THE EXISTING SOIL REMOVED FROM THIS AREA. BACKFILL EXCAVATIONS BELOW A DEPTH OF 1 METER WITH GRANULAR FILL.

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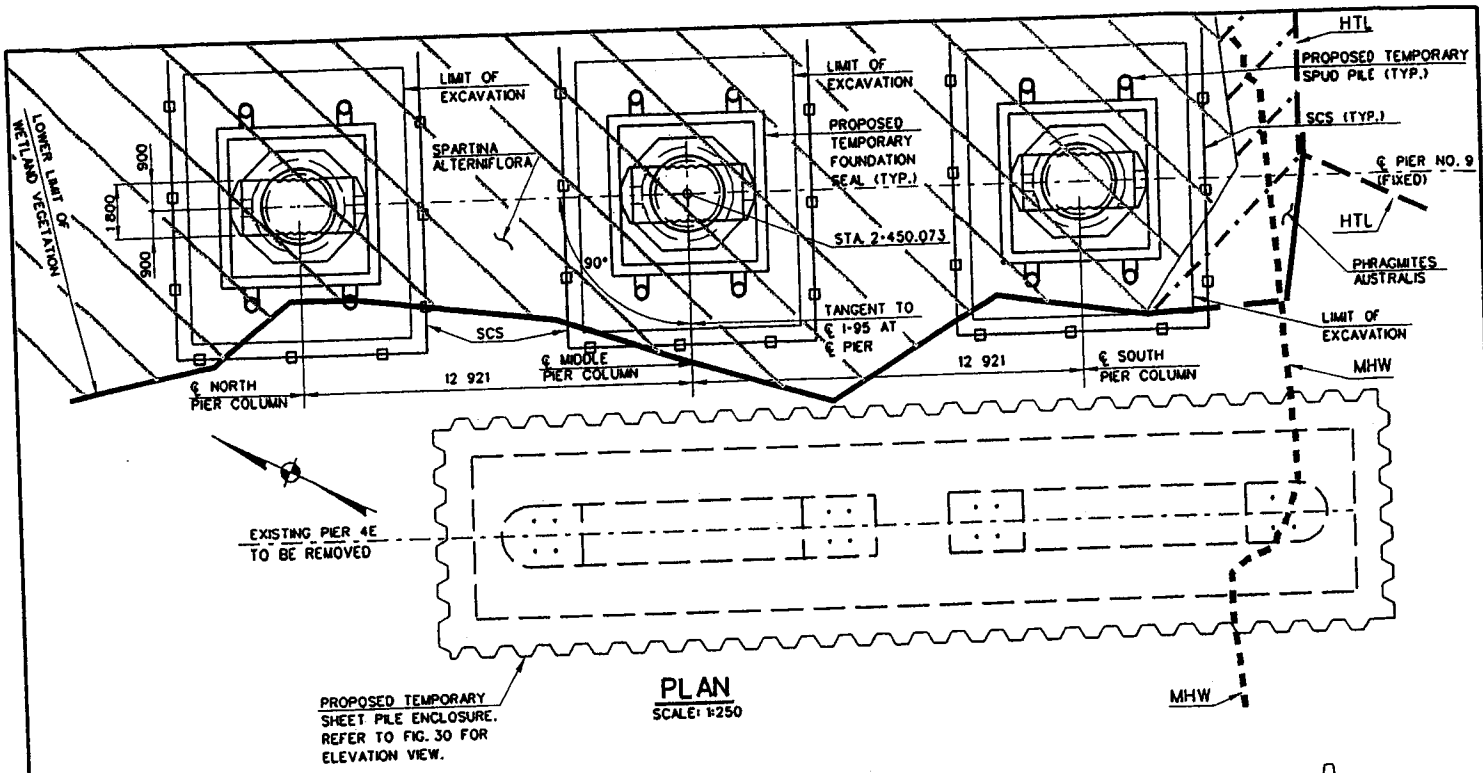
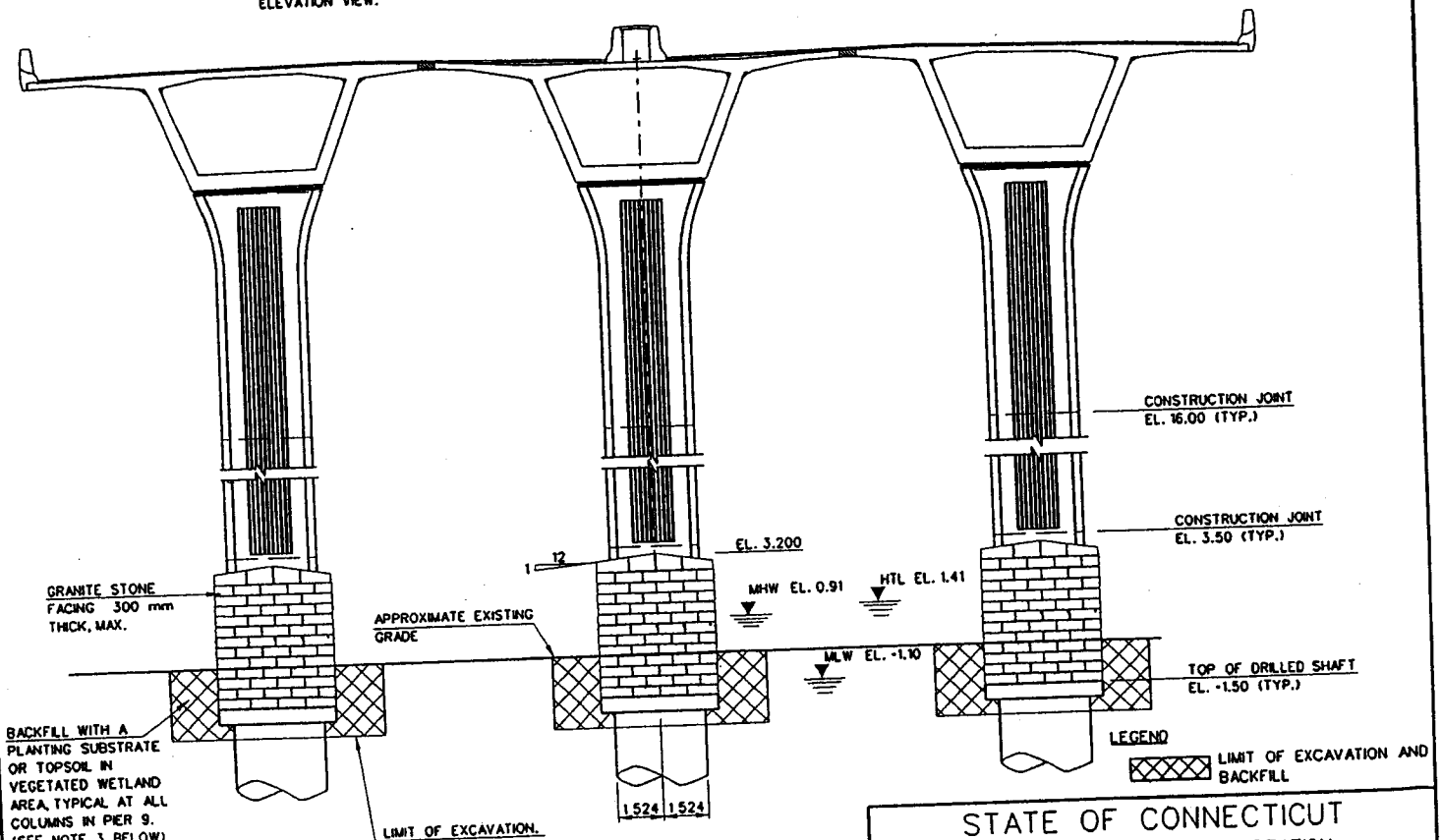
REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER PROJECT NO. 138-221

DATE: 11/22/06 | PIER 8, PIER 2E AND PIER 3E | FIG. 28





ELEVATION
SCALE: 1:250

NOTES:
1. REFER TO FIG. 14 FOR SITE VICINITY PLAN AND TO FIG. VS-2 FOR VEGETATION SKETCH.
2. GEOTEXTILE FENCE SYSTEM (SCS) TO BE USED ABOVE HIGH TIDE LINE. SILT SCREEN TO BE USED BELOW HIGH TIDE LINE AND IN RIVER CHANNEL. SEE DETIALS ON FIGURE 55.
3. BACKFILL THE TOP 1 METER IN WETLAND AREA WITH NATURAL OR MANMADE PLANTING SUBSTRATE/TOPSOIL. PLANTING SUBSTRATE/ TOPSOIL IS A NATURAL OR MANMADE MATERIAL WHICH CONSIST OF SOILS CONTAINING NOT LESS THAN 75% SAND BY WEIGHT AND AN ORGANIC CONTENT NOT LESS THAN 10% AND NOT MORE THAN 15%.

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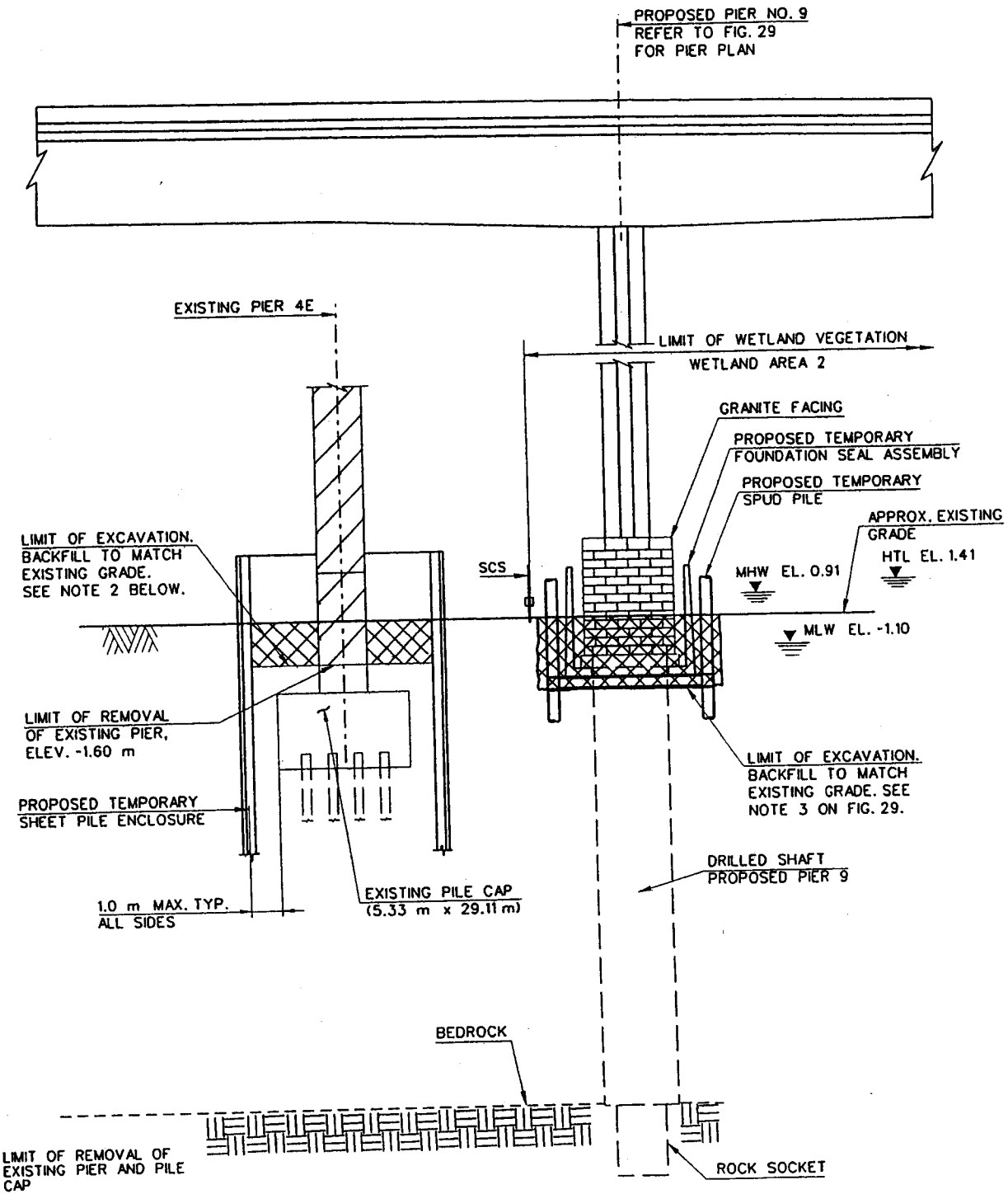
REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER
PROJECT NO. 138-221

DATE: 11/22/06 | PIER 9 AND PIER 4E | FIG. 29



SIDE ELEVATION

SCALE 1:250

NOTES:

1. REFER TO FIGURE 14 FOR SITE VICINITY PLAN. EXISTING PIER 4E IS LOCATED IN OPEN WATER.
2. BACKFILLTHE TOP 1 METER TO RESTORE MUDLINE IN RIVER WITH "STRUCTURAL SOIL". "STRUCTURAL SOIL" IS A SANDY LOAM, INCLUDING COARSE, FINE AND VERY FINE SANDY LOAM TO APPROXIMATE THE TEXTURAL CLASS OF THE EXISTING SOIL REMOVED AT PIER 4E. BACKFILL EXCAVATIONS BELOW A DEPTH OF 1 METER WITH GRANULAR FILL.

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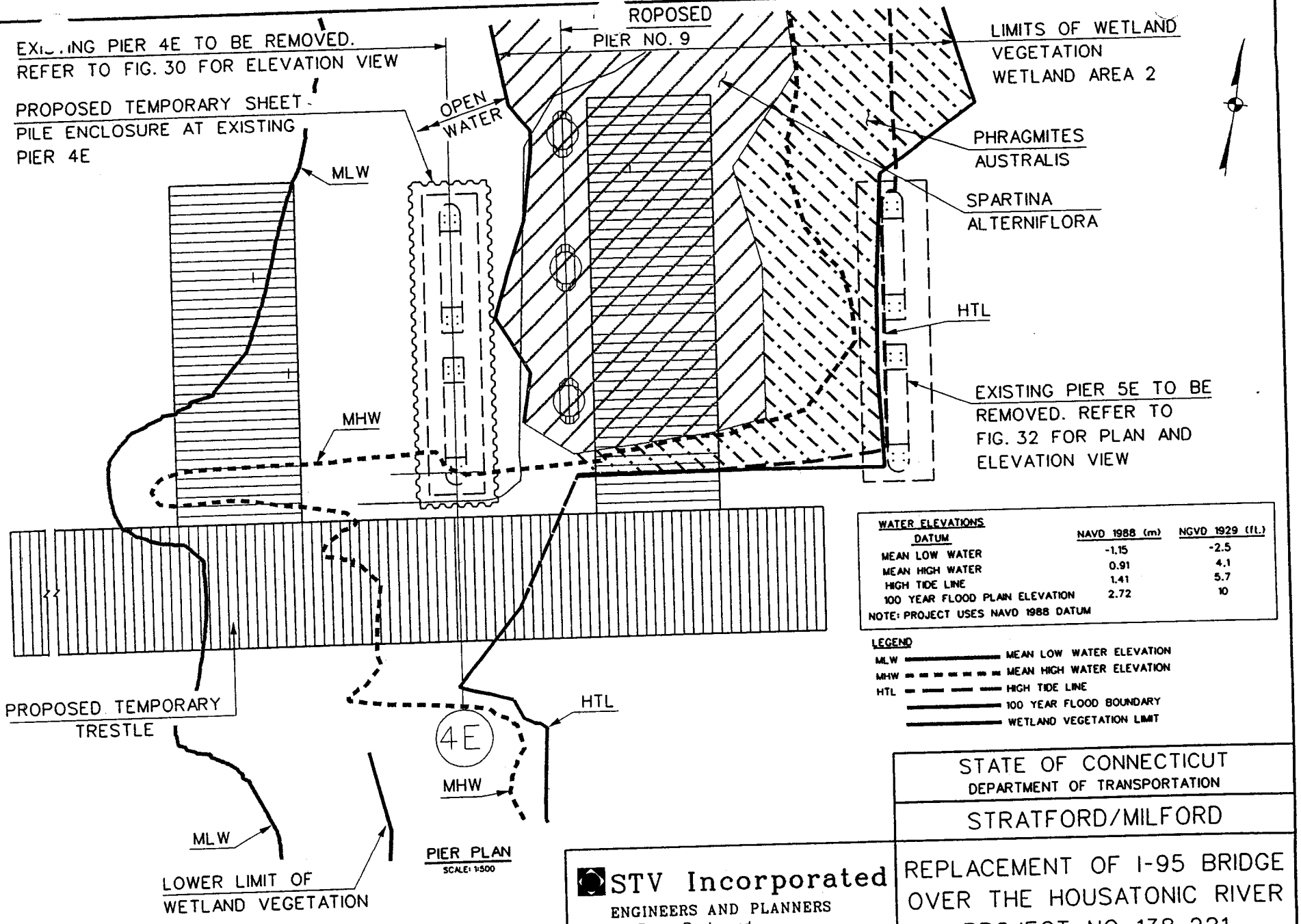
PROJECT NO. 138-221

DATE: 11/22/06 | PIER 9 AND PIER 4E | FIG. 30



WATER ELEVATIONS DATUM	NAVD 1988 (m)	NGVD 1929 (ft.)
MEAN LOW WATER	-1.15	-2.5
MEAN HIGH WATER	0.91	4.1
HIGH TIDE LINE	1.41	5.7
100 YEAR FLOOD PLAIN ELEVATION	2.72	10

NOTE: PROJECT USES NAVD 1988 DATUM

LEGEND

- MLW — MEAN LOW WATER ELEVATION
- MHW — MEAN HIGH WATER ELEVATION
- HTL — HIGH TIDE LINE
- 100 YEAR FLOOD BOUNDARY
- WETLAND VEGETATION LIMIT

NOTE:
REFER TO FIG. 14 FOR SITE VICINITY AND TO FIG. VS-2 FOR VEGETATION SKETCH.

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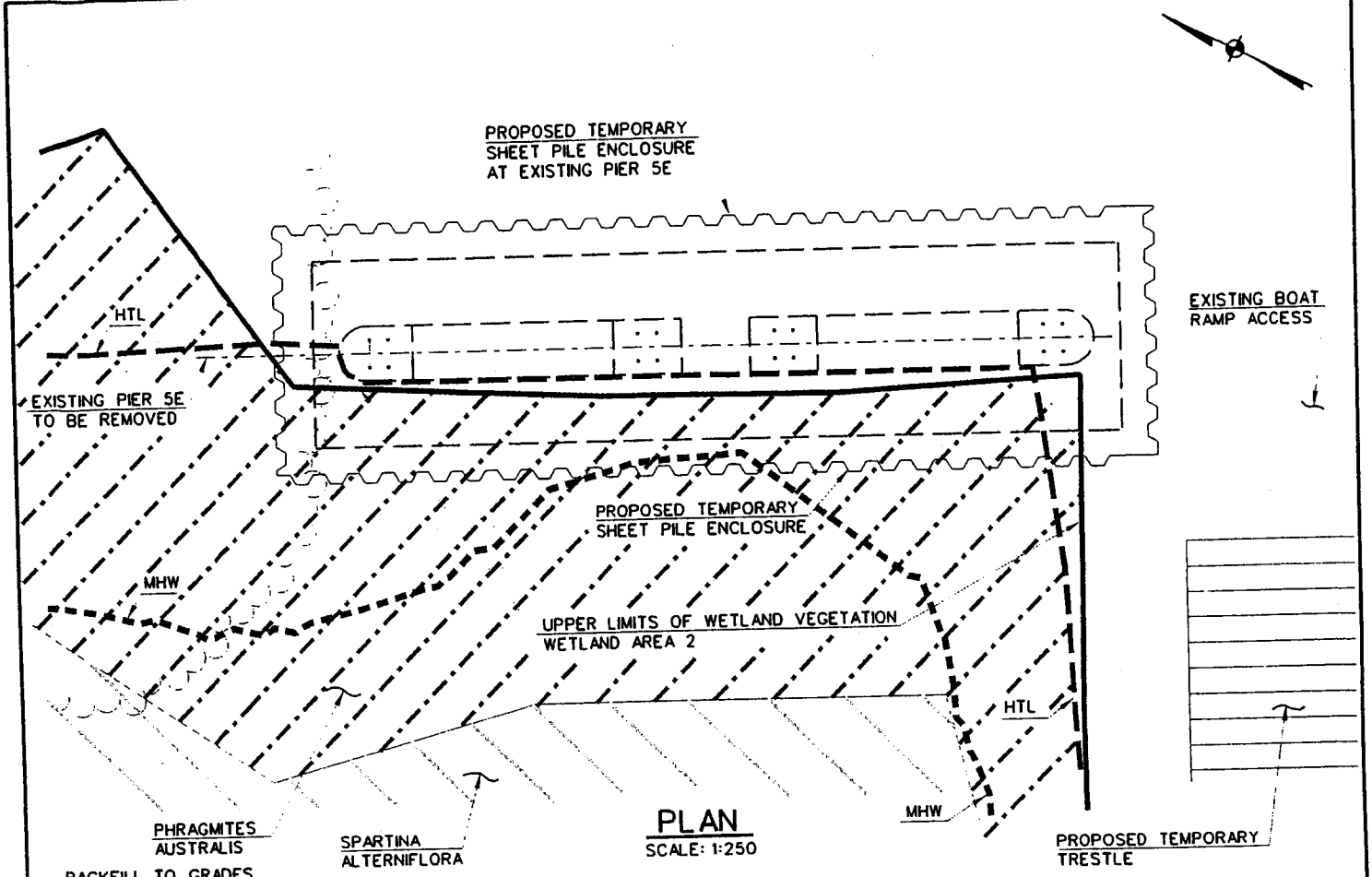
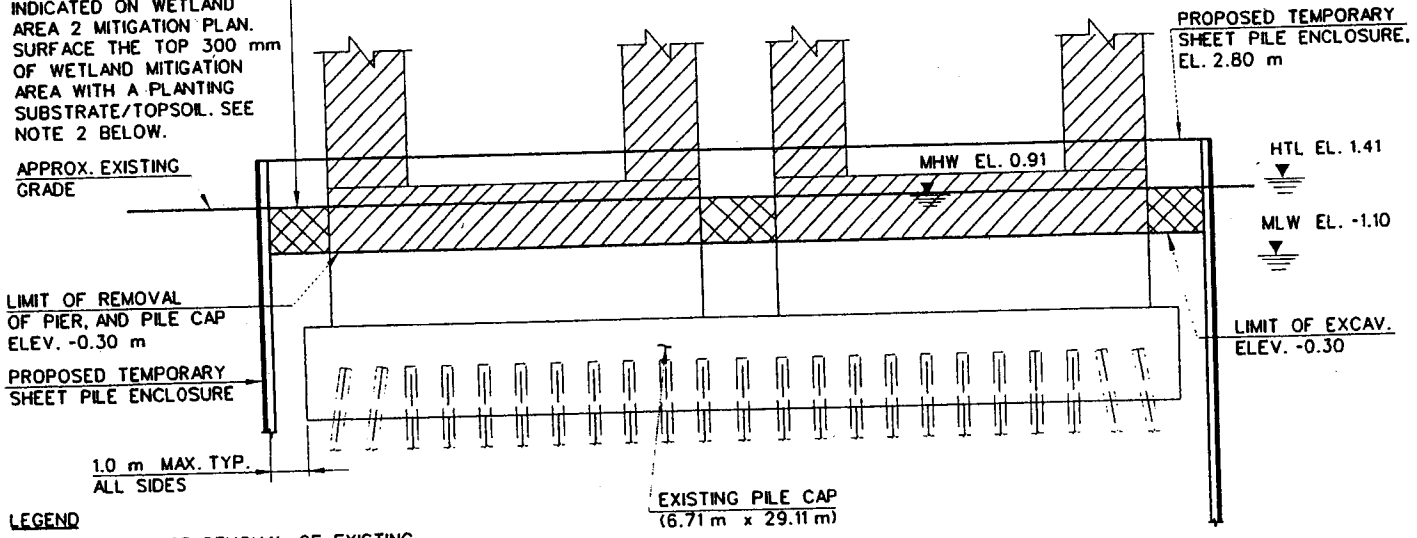
DATE: 11/11/05	PIER 4E AND PIER 9 - PLAN	FIG. 31



PLAN
SCALE: 1:250



ELEVATION
SCALE: 1:250

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LEGEND

LIMIT OF REMOVAL OF EXISTING PIER AND PILE CAP

LIMIT OF EXCAVATION AND BACKFILL

NOTES

1. REFER TO FIG. 14 FOR SITE VICINITY PLAN AND FIG. VS-2 FOR VEGETATION SKETCH.
2. BACKFILL IN VEGETATED WETLAND AREAS SHALL CONSIST OF NATURAL OR MANMADE PLANTING SUBSTRATE OR TOPSOIL, CONSISTING OF SOILS CONTAINING NOT LESS THAN 75% SAND BY WEIGHT AND AN ORGANIC CONTENT OF NOT LESS THAN 10% AND NOT MORE THAN 15%.

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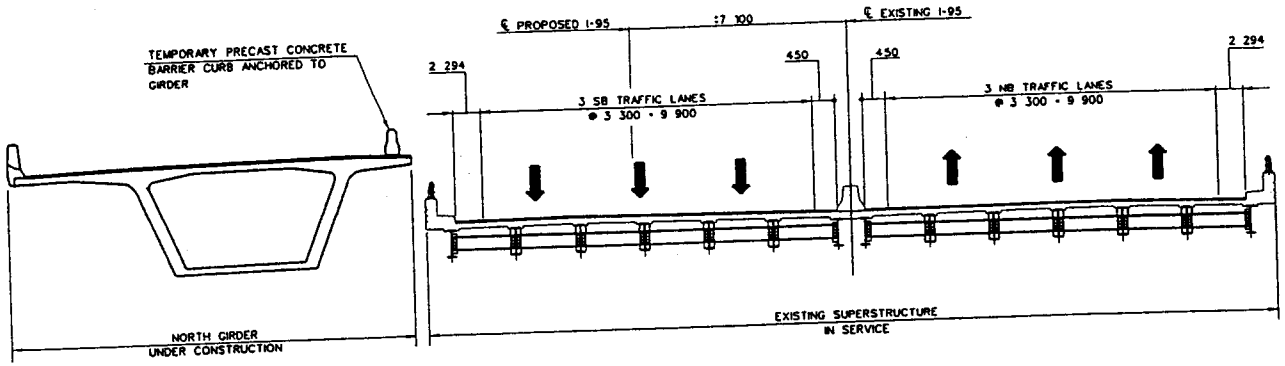
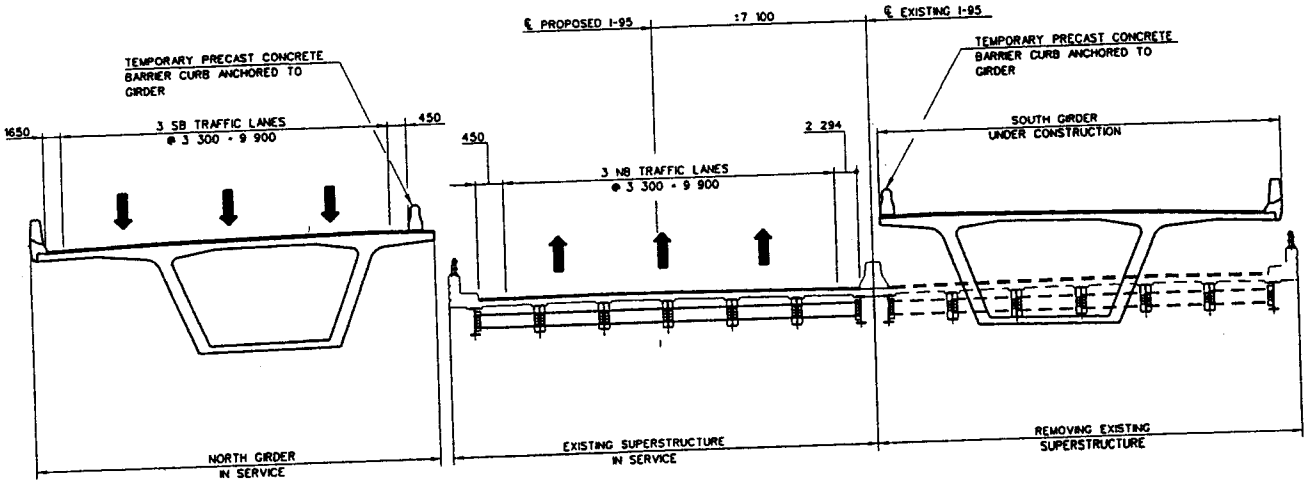
REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER PROJECT NO. 138-221

DATE: 11/22/06 | PIER 5E | FIG. 32



STAGE 1 - SECTION

NOT TO SCALE



STAGE 2 - SECTION

NOT TO SCALE

NOTE: FOR SEQUENCE OF CONSTRUCTION ASSOCIATED WITH THIS STAGE CONSTRUCTION SCHEME SEE FIGURES 34A AND 34B.

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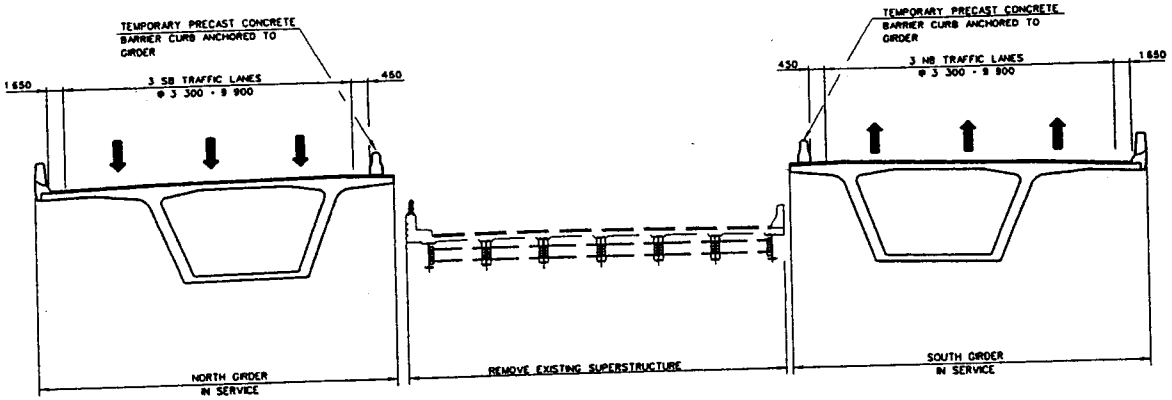
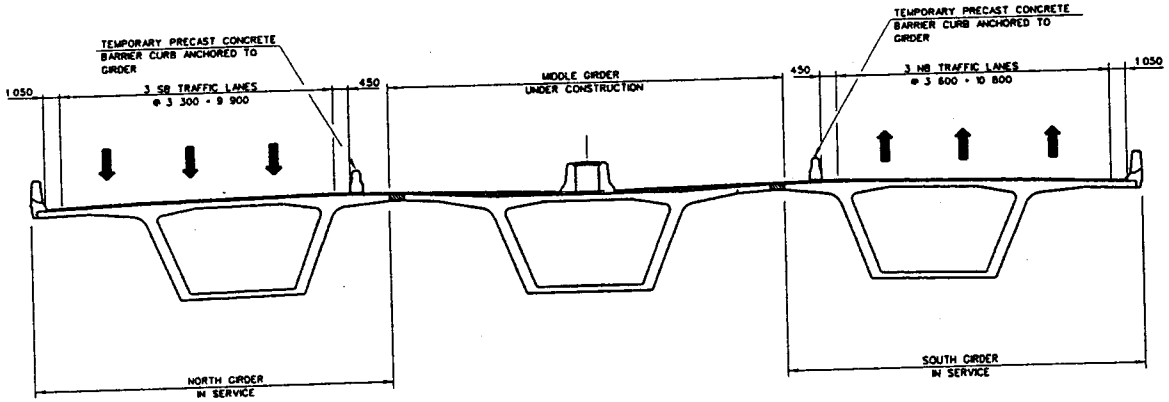
DATE: 11/11/05 | STAGE CONSTRUCTION | FIG. 33



STAGE 3 - PHASE I - SECTION

NOT TO SCALE



STAGE 3 - PHASE II - SECTION

NOT TO SCALE

NOTE: FOR SEQUENCE OF CONSTRUCTION ASSOCIATED WITH THIS STAGE CONSTRUCTION SCHEME SEE FIGURES 34A AND 34B.

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PROJECT NO. 138-221

DATE: 11/11/05	STAGE CONSTRUCTION	FIG. 34

SUGGESTED SEQUENCE OF CONSTRUCTION

THE STAGE CONSTRUCTION SCHEME HAS BEEN DEVELOPED TO MAINTAIN THREE LANES OF TRAVEL ON I-95 N.B. AND S.B. DURING CONSTRUCTION. THE BRIDGES AND RETAINING WALLS WILL BE CONSTRUCTED IN STAGES 1, 2 AND 3. CONSTRUCTION STAGE 4 IS NECESSARY TO ALLOW COMPLETION OF PORTIONS OF THE CONCRETE BASE ON THE HIGHWAY APPROACH SECTIONS TO THE MOSES WHEELER BRIDGE. THE MAJOR ITEMS OF WORK TO BE PERFORMED IN EACH CONSTRUCTION STAGE ARE DESCRIBED BELOW.

CONSTRUCTION STAGE 1: TRAFFIC IS MAINTAINED ON THE EXISTING MOSES WHEELER BRIDGE WHILE THE NORTH SIDE OF THE NEW BRIDGES AND HIGHWAY APPROACHES ARE CONSTRUCTED. STAGE 1 IS ANTICIPATED TO TAKE 25 MONTHS TO COMPLETE. THE MAJOR ITEMS OF WORK TO BE ACCOMPLISHED INCLUDE:

- INSTALL SEDIMENTATION CONTROL SYSTEMS AND CLEAR AND GRUB ON THE NORTH SIDE OF THE FREEWAY.
- SET-UP WASTE STOCKPILE/MANAGEMENT AREA AND STORAGE YARD IN STRATFORD ON STATE PROPERTY BETWEEN I-95 AND FERRY BOULEVARD. THIS WASTE/STOCKPILE AREA IS LOCATED WHERE WET POND NO. 1 WILL BE CONSTRUCTED IN STAGE 4.
- CLOSE STATE BOAT LAUNCH IN MILFORD TO PUBLIC USE AND SET UP STORAGE AND WORK AREA UNDER THE EXISTING BRIDGE AND ALONG THE BOAT LAUNCH ACCESS ROADWAY AND PARKING AREA.
- CLOSE THE AREA UNDER THE MOSES WHEELER BRIDGE IN STRATFORD TO PUBLIC ACCESS AND SET UP WORK ZONE AND ACCESS ROADS INTO THIS WORK AREA.
- CONSTRUCT TEMPORARY TRESTLES FROM RIVER BANKS IN MILFORD AND STRATFORD.
- DEMOLISH HOUSE ON PROPERTY TAKEN ON NAUGATUCK AVENUE AND CONSTRUCT WET POND NO. 3.
- CONSTRUCT STORM SEWER TRUNK LINES AT STREET LEVEL IN MILFORD (DRAINAGE SYSTEM C) AND IN STRATFORD (DRAINAGE SYSTEM E).
- CONSTRUCT INFILTRATION SYSTEM UNDER MOSES WHEELER BRIDGE.
- CONSTRUCT DRILLED SHAFTS, NORTH COLUMNS AND THE NORTH GIRDER OF THE NEW MOSES WHEELER BRIDGE (BRIDGE NO. 135).
- CONSTRUCT STAGE 1 (THE NORTH ONE-THIRD) OF BRIDGE NOS. 133, 134, AND 06613.
- CONSTRUCT RETAINING WALL NOS. 101, 102 AND 103.
- CONSTRUCT EMBANKMENTS ON NORTH SIDE OF I-95, PAVEMENTS AND STORM DRAINAGE SYSTEMS ON THE NORTH SIDE OF FREEWAY APPROACH SECTIONS.
- SHIFT THE I-95 S.B. TRAFFIC ONTO THE NEWLY CONSTRUCTED NORTH SECTION OF I-95 AND BRIDGES TO COMMENCE CONSTRUCTION STAGE 2.

CONSTRUCTION STAGE 2: I-95 S.B. TRAFFIC IS MAINTAINED ON THE NEWLY CONSTRUCTED NORTH SECTION IN THIS STAGE AND THE I-95 N.B. TRAFFIC IS OPERATING WHERE THE I-95 S.B. TRAFFIC OPERATED DURING CONSTRUCTION STAGE 1. THE WORK ZONE ON I-95 IS THE SOUTH SIDE OF I-95 IN THIS STAGE. CONSTRUCTION STAGE 2 IS ANTICIPATED TO REQUIRE 22 MONTHS TO COMPLETE AND INCLUDES THE FOLLOWING MAJOR WORK ITEMS:

- INSTALL SEDIMENTATION CONTROL SYSTEMS ALONG AND THROUGHOUT THE STAGE 2 WORK ZONE. SEDIMENTATION CONTROLS INSTALLED IN CONSTRUCTION STAGE 1 SHALL BE MAINTAINED IN SERVICE.
- PERFORM CLEARING AND GRUBBING ALONG THE SOUTH SIDE OF I-95.
- DEMOLISH THE SOUTH SIDE OF BRIDGE NOS. 133, 134 AND THE SOUTHERLY ONE-HALF OF THE SUPERSTRUCTURE OF THE EXISTING MOSES WHEELER BRIDGE. THE SUBSTRUCTURE OF THE MOSES WHEELER BRIDGE WILL BE DEMOLISHED IN CONSTRUCTION STAGE 3.
- CONSTRUCT DRILLED SHAFTS, THE SOUTH COLUMNS AND SOUTH GIRDER OF THE NEW MOSES WHEELER BRIDGE.
- CONSTRUCT THE SOUTH SIDE OF NEW BRIDGE NOS. 133, 134 AND 06613.
- RECONSTRUCT PAVEMENTS AND STORM DRAINAGE SYSTEMS ON THE SOUTH ONE-THIRD OF THE HIGHWAY APPROACH SECTIONS.
- SHIFT THE I-95 N.B. TRAFFIC ONTO THE NEWLY CONSTRUCTED SOUTH SECTION OF I-95 TO COMMENCE CONSTRUCTION STAGE 3.

(CONTINUED ON FIG. 34B)

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PROJECT NO. 138-221

DATE: 11/11/05 | SEQUENCE OF CONSTRUCTION | FIG. 34A

SUGGESTED SEQUENCE OF CONSTRUCTION
(CONTINUED FROM FIG. 34A)

CONSTRUCTION STAGE 3: THE I-95 S.B. TRAFFIC IS MAINTAINED IN THE SAME LOCATION AS IN STAGE 2. THE I-95 N.B. TRAFFIC HAS BEEN SHIFTED TO OPERATE ON THE SOUTH SIDE OF I-95 THAT WAS CONSTRUCTED IN STAGE 2. THE WORK ZONE IN STAGE 3 IS THE CENTER SECTION OF I-95. CONSTRUCTION STAGE 3 IS ANTICPATED TO TAKE 19 MONTHS TO COMPLETE. THE MAJOR ITEMS OF WORK TO BE CONSTRUCTED IN THIS STAGE INCLUDE:

- RESET SEDIMENTATION CONTROL SYSTEMS FOR ACCESS TO THE WORK ZONE. MAINTAIN SEDIMENTATION CONTROLS PREVIOUSLY INSTALLED.
- DEMOLISH THE REMAINDER OF THE OLD PORTIONS OF BRIDGE NOS. 133 AND 134.
- DEMOLISH THE NORTHERLY HALF OF THE SUPERSTRUCTURE OF THE OLD MOSES WHEELER BRIDGE.
- CONSTRUCT DRILLED SHAFTS, CENTER COLUMNS AND THE CENTER GIRDER OF THE NEW MOSES WHEELER BRIDGE.
- CONSTRUCT THE CENTER SECTIONS OF NEW BRIDGE NOS. 133, 134 AND 06613.
- RECONSTRUCT PAVEMENTS AND STORM DRAINAGE SYSTEMS IN THE CENTER ONE-THIRD OF I-95. CONSTRUCT THE MEDIAN BARRIERS ON I-95.
- INSTALL TEMPORARY SHEET PILE ENCLOSURES AROUND THE EXISTING MOSES WHEELER BRIDGE PIERS 4W, 3W, 2W, 1W, 1E, 2E, 3E, 4E AND 5E.
- DEMOLISH THE EXISTING SUBSTRUCTURE ELEMENTS OF THE MOSES WHEELER BRIDGE. CONSTRUCT WET POND NO. 2 AND THE WETLAND MITIGATION AREA UNDER THE MOSES WHEELER BRIDGE IN MILFORD (THIS WORK MAY BE COMPLETED IN STAGE 4).
- REMOVE ALL TEMPORARY TRAFFIC CONTROL SYSTEMS ON I-95 AND OPEN THE NEW FREEWAY TO TRAFFIC.

CONSTRUCTION STAGE 4: THIS STAGE IS NECESSARY TO ALLOW COMPLETION OF SOME SECTIONS OF THE NEW CONCRETE BASE AND PAVEMENTS ON THE MILFORD AND STRATFORD HIGHWAY APPROACHES THAT WERE RECONSTRUCTED IN STAGES 1, 2 AND 3. THIS WORK WILL BE DONE AT NIGHT DURING TIMES WHEN TRAFFIC LANES CAN BE TEMPORARILY CLOSED AT LOCALIZED WORK AREAS ON THE FREEWAY. CONSTRUCTION STAGE 4 IS ANTICIPATED TO TAKE 6 MONTHS TO COMPLETE. THE WORK TO BE PERFORMED IN THIS STAGE INCLUDES:

- COMPLETE THE PERMANENT PAVEMENT SECTIONS ON THE I-95 HIGHWAY APPROACHES.
- REMOVE THE TEMPORARY TRESTLES FROM THE RIVER.
- RECONSTRUCT THE STATE BOAT LAUNCH RAMP, ACCESS ROAD AND PARKING AREA AND OPEN THE BOAT LAUNCH TO PUBLIC USE.
- REMOVE THE WASTE STOCKPILE/MANAGEMENT AREA.
- CONSTRUCT WET POND NO. 1.
- REMOVE ALL SEDIMENATION CONTROLS AND REMAINING TEMPORARY CONSTRUCTIONS.

NOTE: THIS IS A SUGGESTED SEQUENCE OF CONSTRUCTION. THE CONTRACTOR MAY MODIFY THIS SEQUENCE OF CONSTRUCTION TO COMPLETE THE ELEMENTS OF CONSTRUCTION ON A DIFFERENT SCHEDULE TO THE BENEFIT OF HIS WORK FORCES AND TO EXPEDITE CONSTRUCTION.

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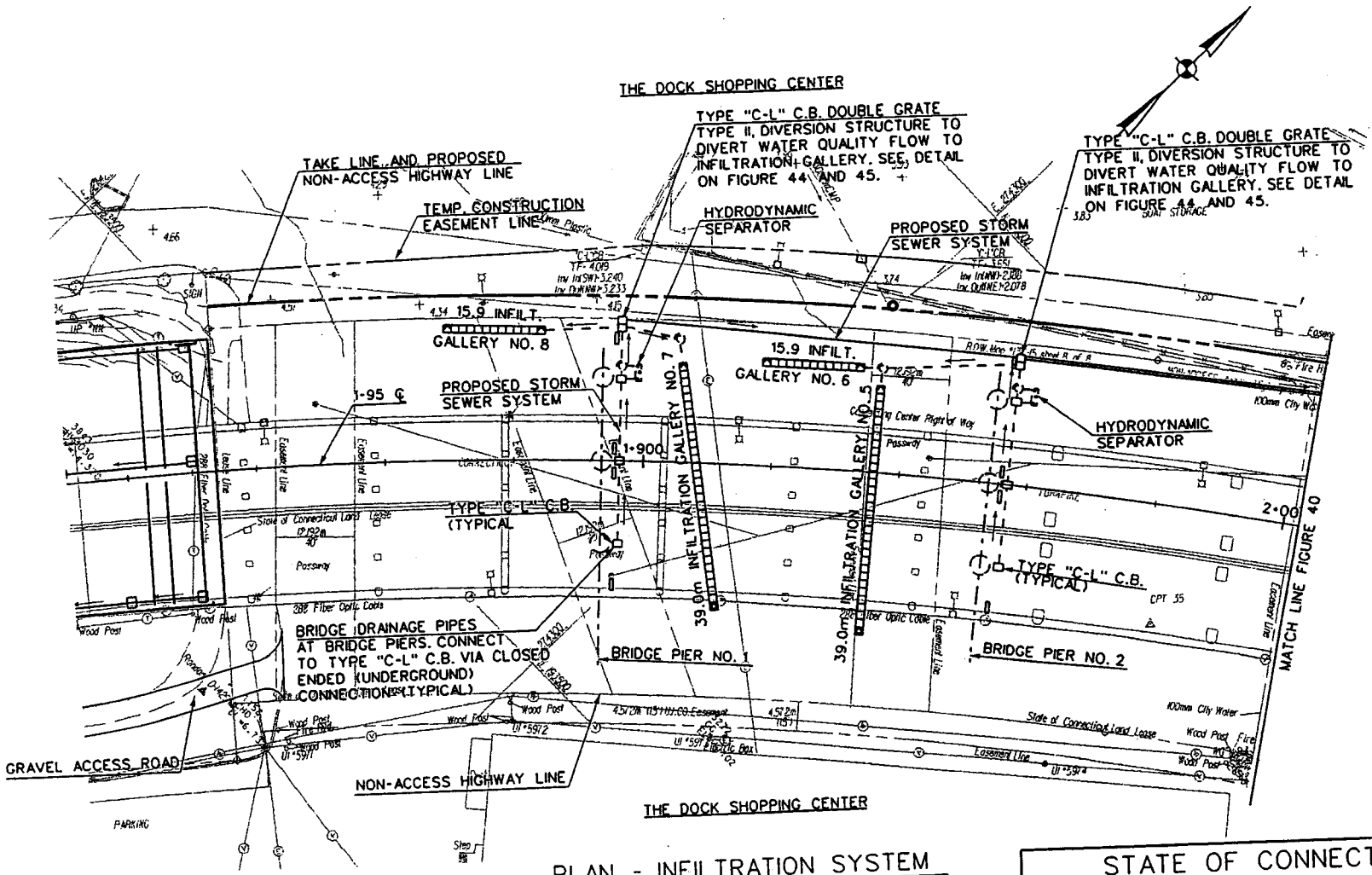
DATE: 11/11/05	SEQUENCE OF CONSTRUCTION	FIG.34B



PLAN - INFILTRATION SYSTEM

SCALE: 1:1000

NOTES:
1. THE PROPOSED INFILTRATION SYSTEM IS LOCATED IN THE PAVED PARKING LOT UNDER THE PROPOSED MOSES WHEELER BRIDGE. FOR CLARITY THIS PLAN VIEW DOES NOT SHOW THE PROPOSED MOSES WHEELER BRIDGE DECK.
2. ALL STORMWATER HANDLED IN THIS INFILTRATION SYSTEM COMES OFF THE BRIDGE DECK OF THE MOSES WHEELER BRIDGE. FOR DETAILS OF THE INFILTRATION SYSTEM SEE FIGURES 41 THROUGH 45.

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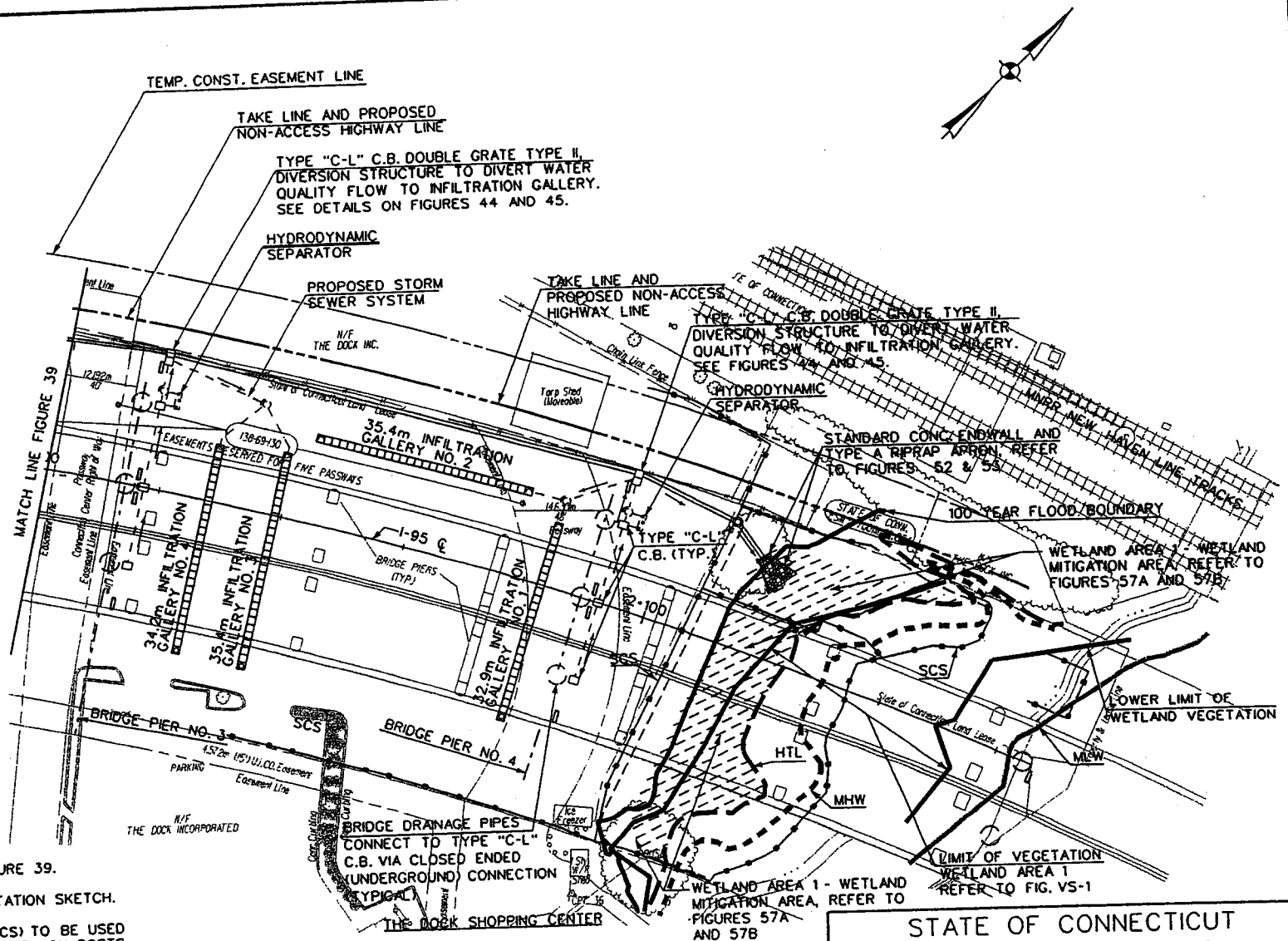
DATE: 11/11/05 | PROPOSED INFILTRATION SYSTEM | FIG. 39



PLAN - INFILTRATION SYSTEM

SCALE: 1:1000

NOTES:

1. SEE NOTES 1, 2 AND 3 ON FIGURE 39.
2. REFER TO FIG. VS-1 FOR VEGETATION SKETCH.
3. GEOTEXTILE FENCE SYSTEM (SCS) TO BE USED ABOVE HIGH TIDE LINE. SILT SCREEN ON POSTS TO BE USED BELOW HIGH TIDE LINE. SEE FIGURE 55 FOR DETAILS.

LEGEND

- MLW — MEAN LOW WATER ELEVATION
- MHW — MEAN HIGH WATER ELEVATION
- HTL — HIGH TIDE LINE
- WETLAND VEGETATION LIMIT
- 100 YEAR FLOOD BOUNDARY

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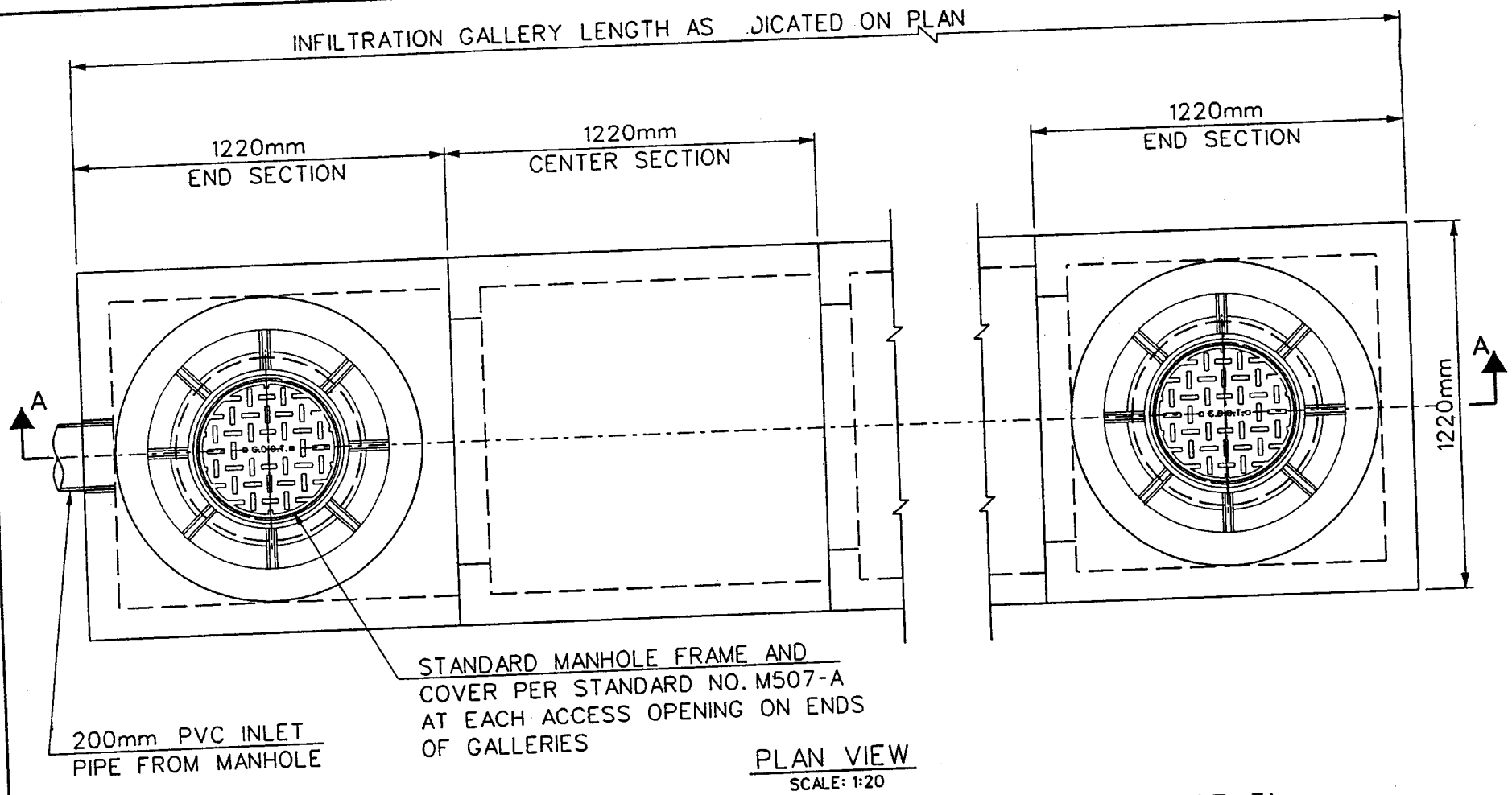
DATE: 11/22/06 | PROPOSED INFILTRATION SYSTEM | FIG. 40



PLAN VIEW
SCALE: 1:20

TYPICAL DETAILS- PRECAST INFILTRATION GALLERY (1 OF 3)

NOTES:

1. PRECAST INFILTRATION GALLERY SHALL CONFORM TO THE REQUIREMENTS FOR PRECAST UNITS FOR DRAINAGE STRUCTURES OF ARTICLE M.08.02 OF THE STANDARD SPECIFICATIONS (FORM 815)
2. THE DESIGN LOADING FOR PRECAST INFILTRATION GALLERY SHALL BE AASHTO HS20-44.

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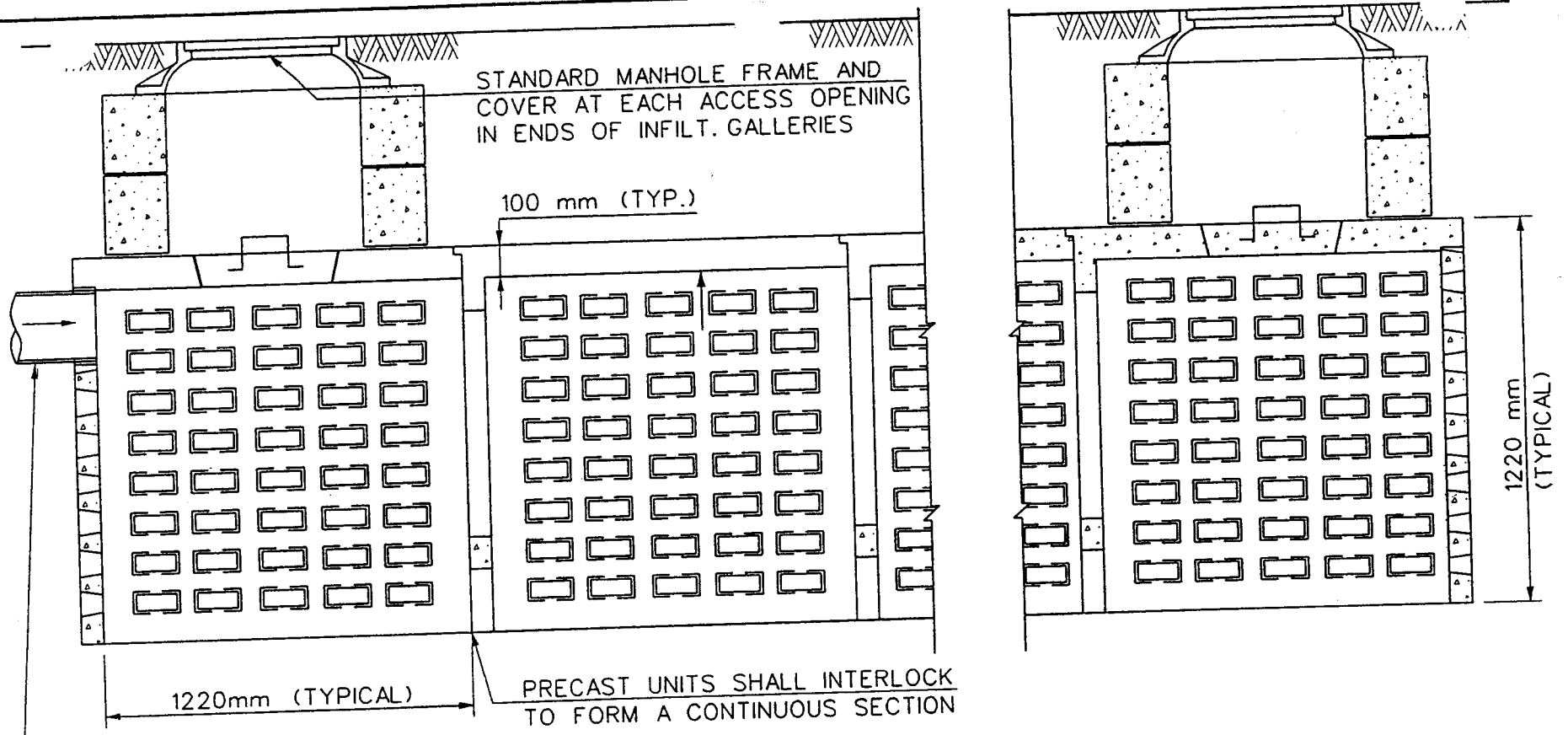
DATE: 11/11/05	PRECAST INFILTRATION GALLERIES TYPICAL DETAILS	FIG. 41



SECTION A-A

SCALE: 1:20

TYPICAL DETAILS- PRECAST INFILTRATION GALLERY (2 OF 3)

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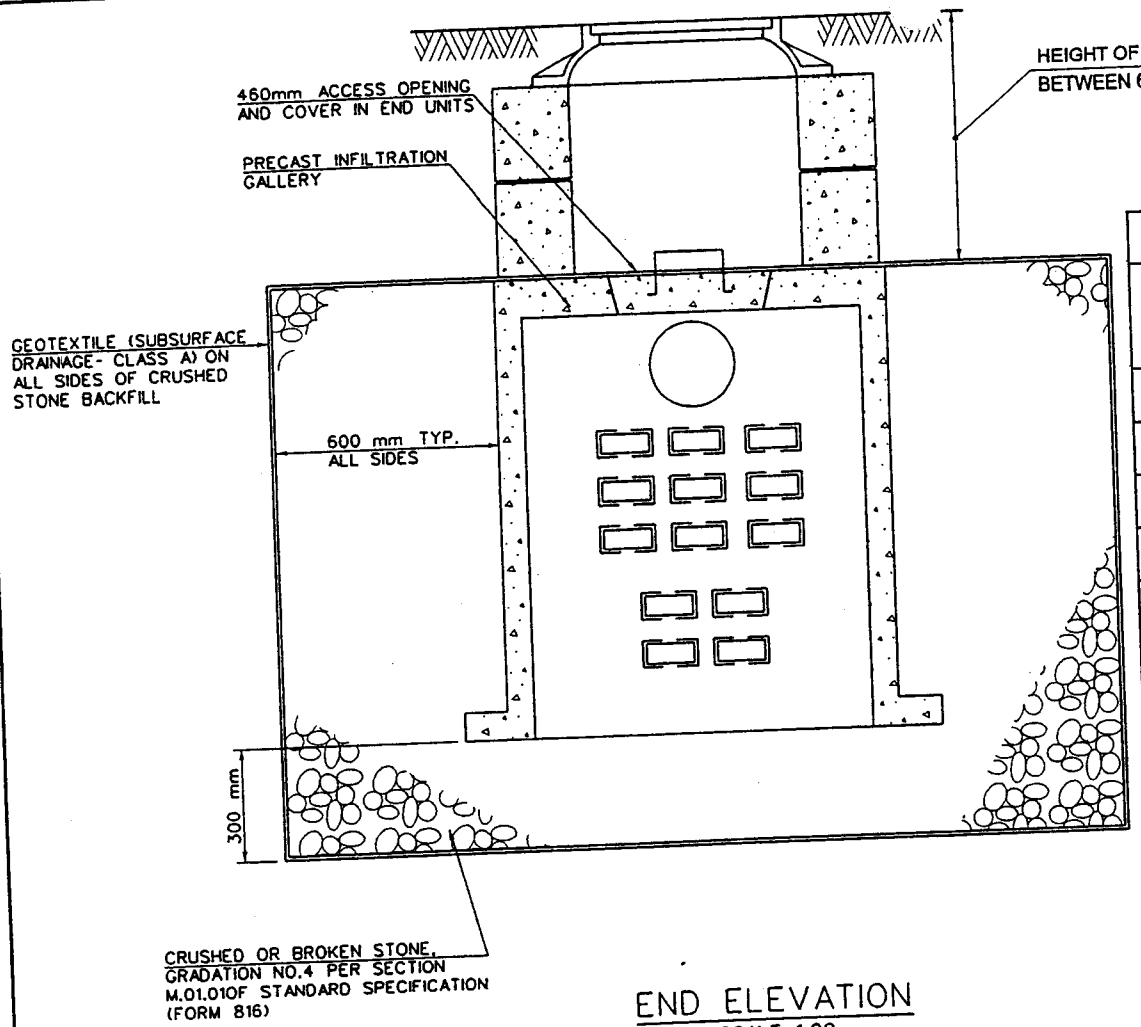
DATE: 11/11/05	PRECAST INFILTRATION GALLERIES TYPICAL DETAILS	FIG. 42



END ELEVATION
SCALE: 1:20

INFILTRATION GALLERY ELEVATION DATA TABLE			
INFILTRATION GALLERY I.D. NO.	BOTTOM OF EXCAVATION ELEV.	APPROX. GROUNDWATER ELEV.	APPROX. TOP OF ROCK ELEV.
1	1.350	0.80	- 2.20
2	1.350	0.80	- 2.20
3	1.600	1.00	- 9.10
4	1.600	1.00	- 9.10
5	1.800	1.10	- 5.40
6	1.880	1.10	- 5.40
7	2.100	1.30	UNKNOWN
8	2.100	1.40	- 1.80

FOR LOCATIONS AND LENGTHS OF INFILTRATION GALLERIES BY I.D. NO. SEE FIGURES 39 AND 40.

GROUNDWATER ELEVATION DATA IN THIS TABLE IS BASED ON MEASUREMENTS TAKEN IN MAY 2004 AT OBSERVATION WELLS IN THE AREA OF THE PROPOSED INFILTRATION SYSTEMS.

TYPICAL DETAILS- PRECAST INFILTRATION GALLERY
(3 OF 3)

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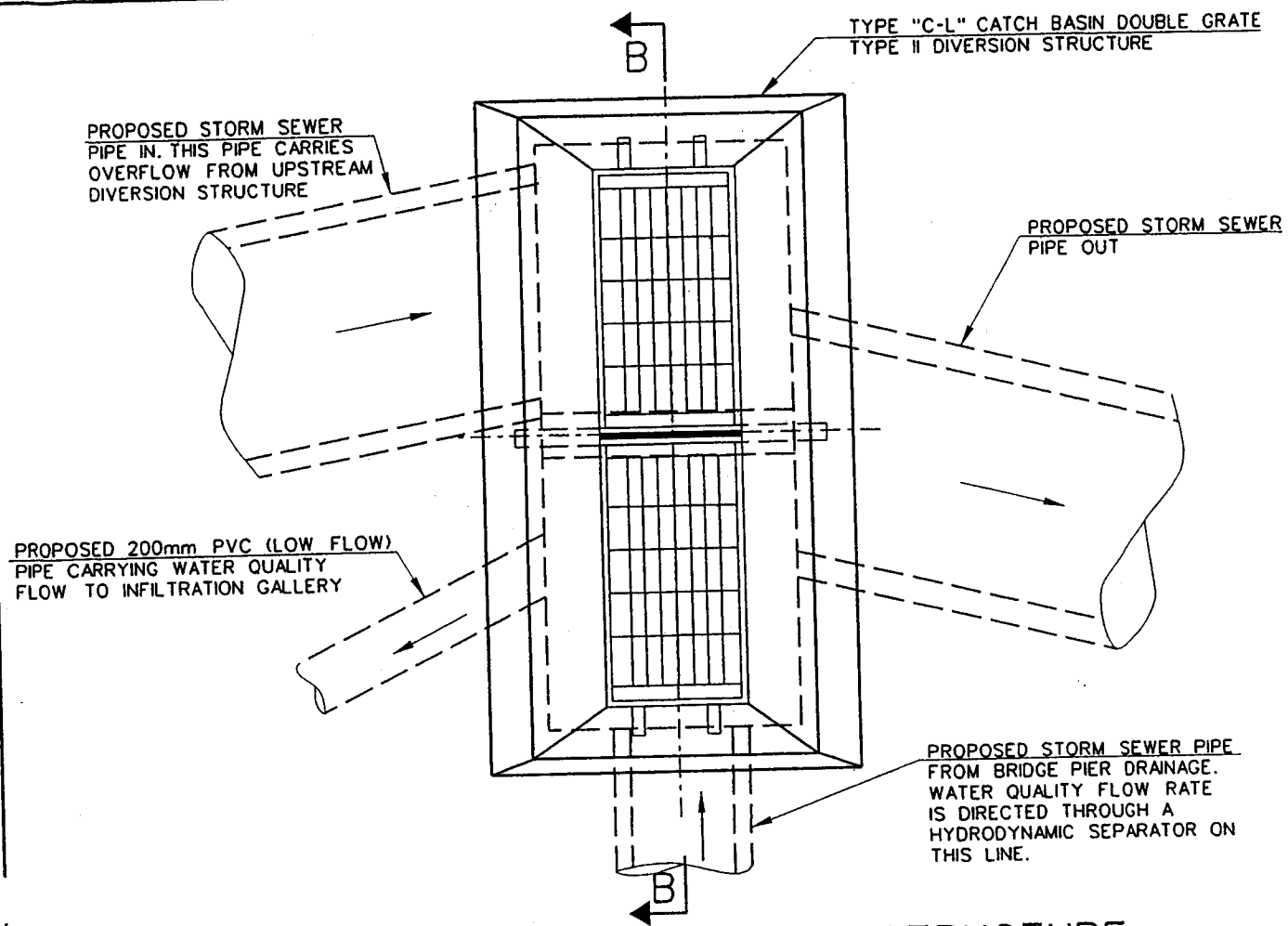
DATE: 11/11/05	PRECAST INFILTRATION GALLERIES TYPICAL DETAILS	FIG. 43



PLAN - TYPICAL DIVERSION STRUCTURE

SCALE 1:25

NOTES: 1. THESE CATCH BASIN UNITS ARE FLOW DIVERSION STRUCTURES. WATER QUALITY FLOW (WQF) RATE IS DIRECTED TO THE INFILTRATION GALLERY VIA THE 200mm DIAMETER PVC PIPES. STORMWATER FLOWS IN EXCESS OF THE WQF RATE ARE CARRIED TO AN OUTFALL AT THE HOUSATONIC RIVER VIA THE STORM SEWER PIPE SYSTEM.

2. STORMWATER RUNOFF ON THE BRIDGE DECK IS INTERCEPTED IN BRIDGE SCUPPERS AND DIRECTED DOWN BRIDGE PIERS IN BRIDGE DRAINAGE PIPES. BRIDGE DRAINAGE PIPES ARE CONNECTED TO TYPE "C-L" CATCH BASINS IN THE PAVED PARKING AREA UNDER THE BRIDGE BY A CLOSED ENDED (UNDERGROUND) CONNECTION.

3. STORMWATER TREATMENT SYSTEMS IN THE PAVED PARKING AREA LOCATED UNDER THE BRIDGE AND ADJACENT TO THE DOCK SHOPPING CENTER ARE SIZED FOR THE FOLLOWING:

BRIDGE DRAINAGE AT BRIDGE PIER NO.	WQV TO INFILTRATION GALLERY	WQF RATE TO HYDRODYNAMIC SEPARATOR UNITS
1	2,086 FT³	0.6 CFS
2	2,086 FT³	0.6 CFS
3	2,600 FT³	0.7 CFS
4	2,573 FT³	0.7 CFS

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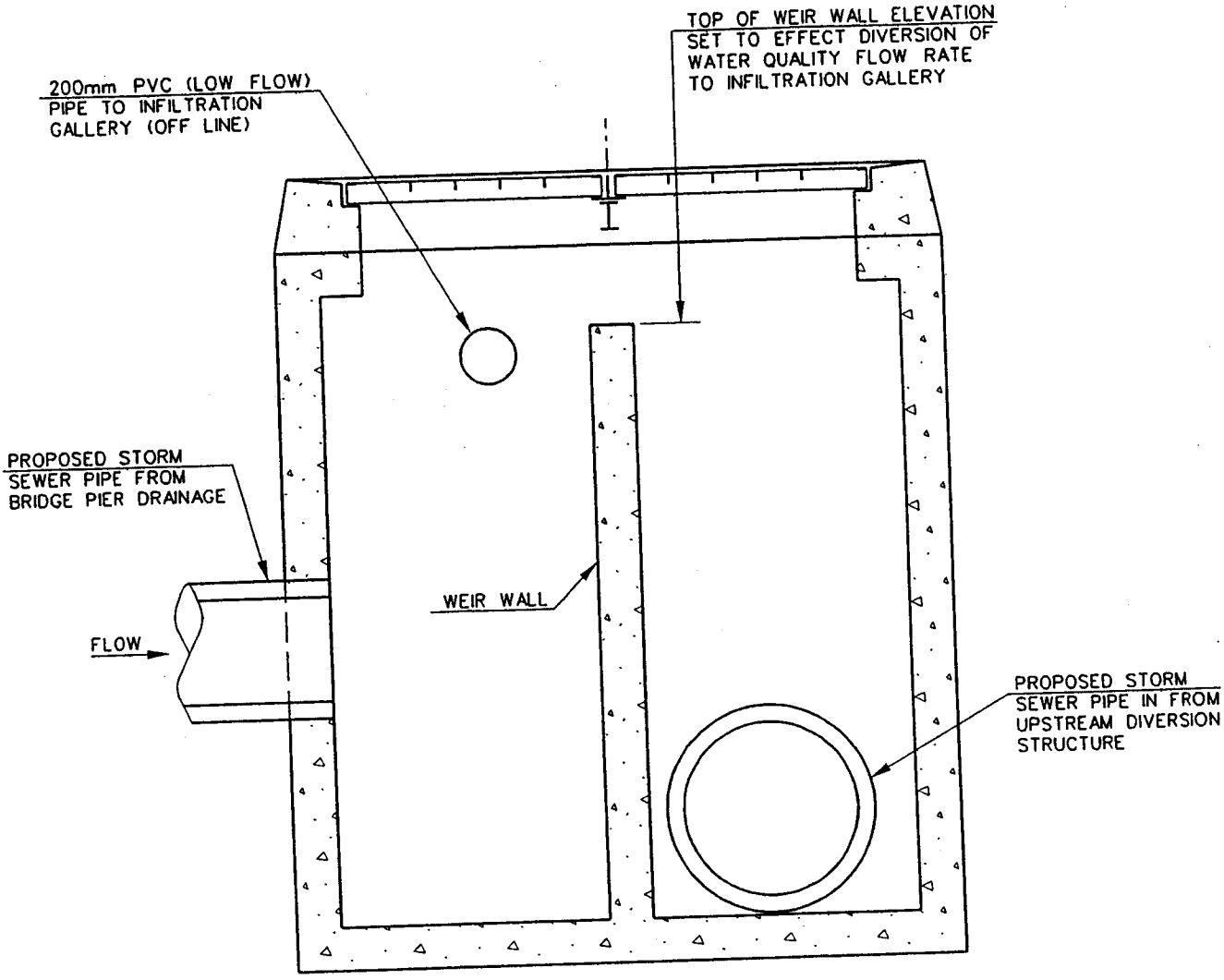
DATE: 11/11/05 | INFILTRATION SYSTEM DETAIL | FIG. 44



SECTION B-B
TYPICAL DIVERSION STRUCTURE

SCALE 1:25

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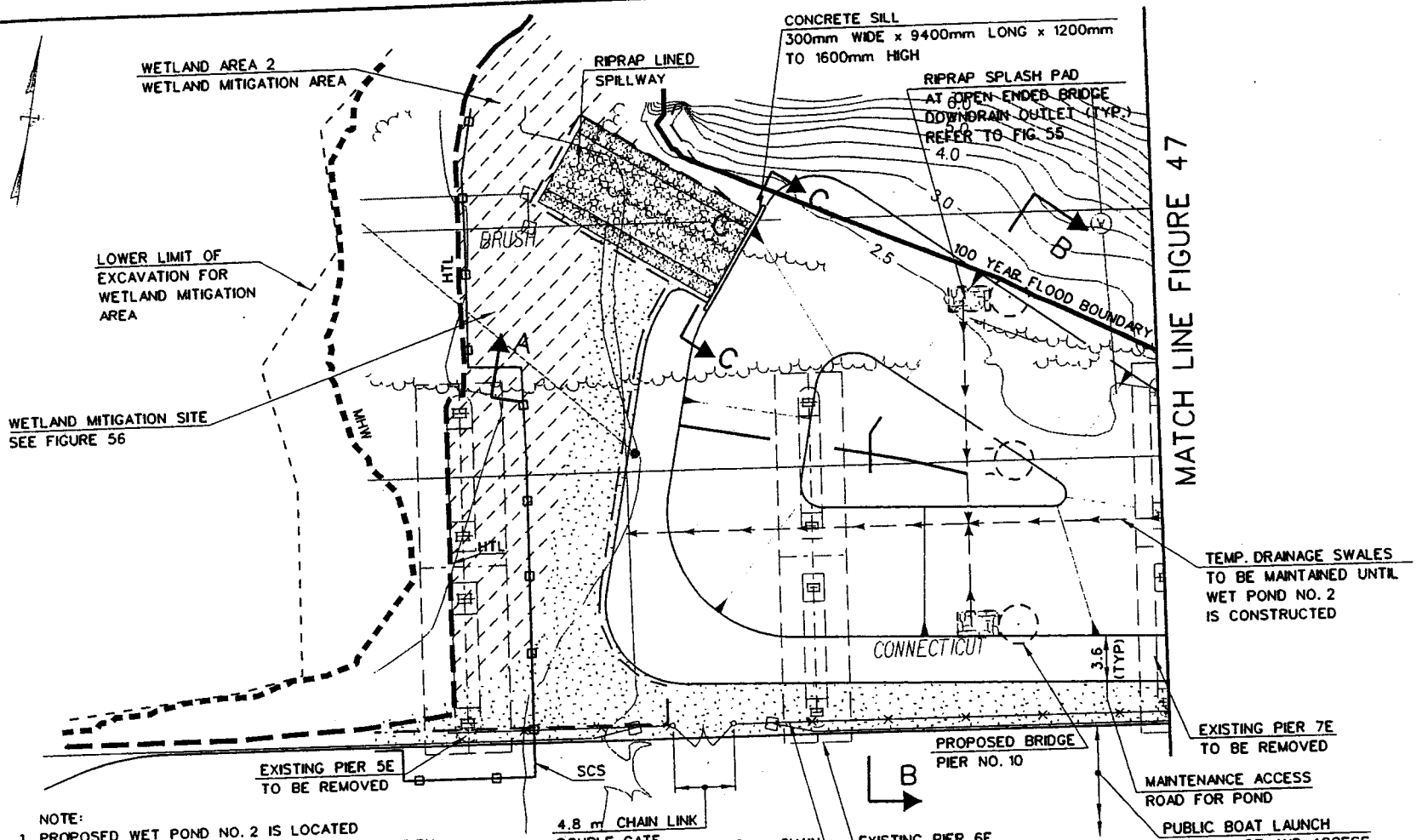
DATE: 11/11/05 | INFILTRATION SYSTEM DETAIL | FIG. 45



NOTE:

1. PROPOSED WET POND NO. 2 IS LOCATED UNDER THE MOSES WHEELER BRIDGE. FOR CLARITY THE PROPOSED BRIDGE DECK IS NOT SHOWN.
2. REFER TO FIG. VS-2 FOR THE VEGETATION SKETCH.
3. PROPOSED WET POND NO. 2 WILL BE CONSTRUCTED IN THE FINAL STAGE OF THE PROJECT AFTER THE NEW MOSES WHEELER BRIDGE IS COMPLETE AND THE EXISTING BRIDGE HAS BEEN DEMOLISHED
4. FOR SECTIONS A-A, B-B AND C-C SEE FIGURE 48.

LEGEND

MHW — MEAN HIGH WATER ELEVATION

HTL — HIGH TIDE LINE

100 YEAR FLOOD BOUNDARY

PLAN - WET POND NO. 2

SCALE: 1:500

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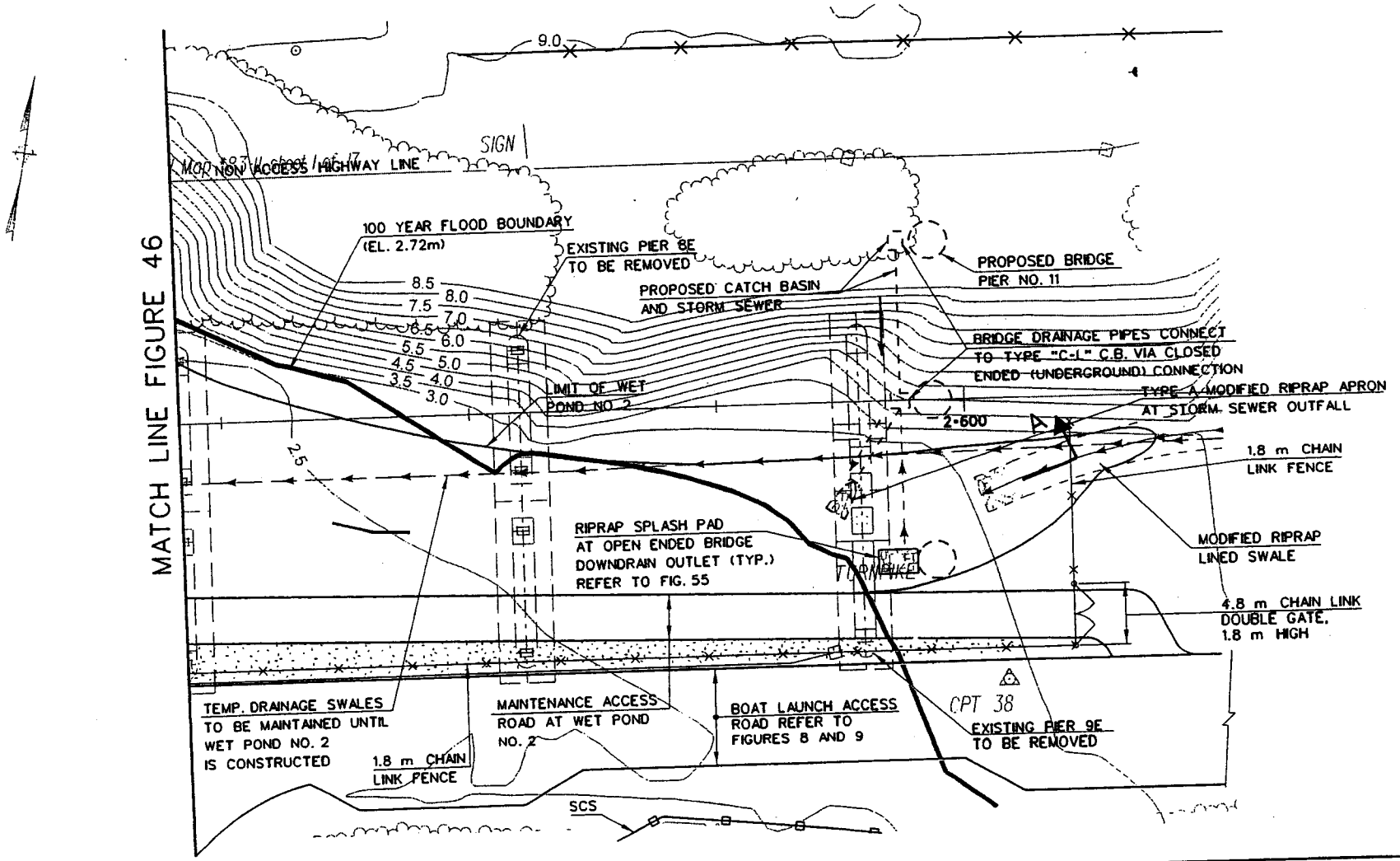
DATE: 11/22/06	PROPOSED WET POND NO. 2	FIG. 46



PLAN - RETENTION POND NO. 2

SCALE: 1:500

NOTE:
PROPOSED WET POND NO. 2 IS LOCATED UNDER THE MOSES WHEELER BRIDGE. THE PROPOSED BRIDGE DECK IS NOT SHOWN FOR CLARITY.

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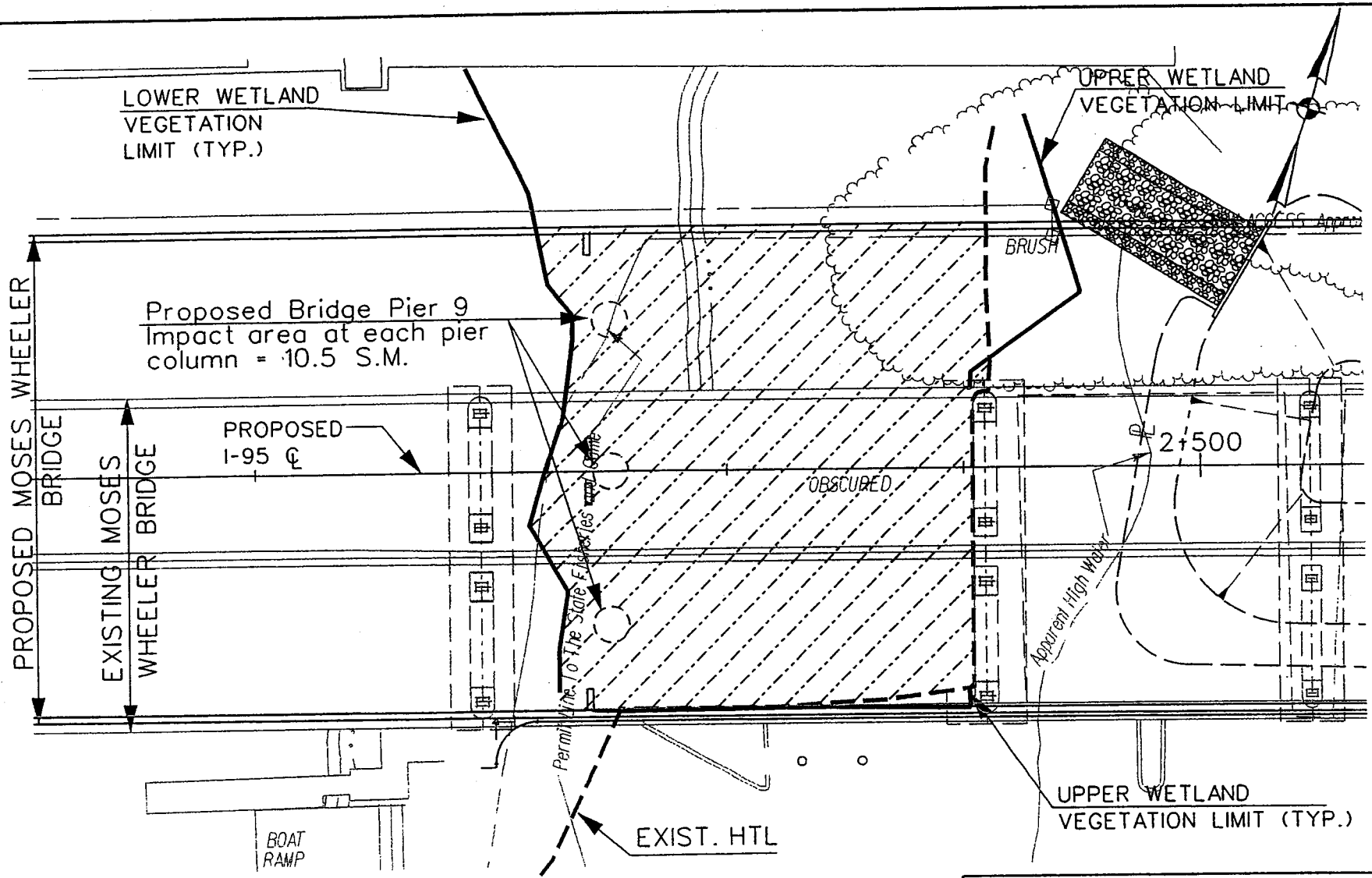
DATE: 11/22/06	PROPOSED WET POND NO. 2	FIG. 47



PLAN

SCALE: 1:500

LEGEND

SHADOW AREA IN WETLANDS UNDER EXISTING BRIDGE, AREA = 947.0 S.M.

SHADOW AREA INWETLANDS UNDER PROPOSED BRIDGE, AREA = 1,421.5 S.M.

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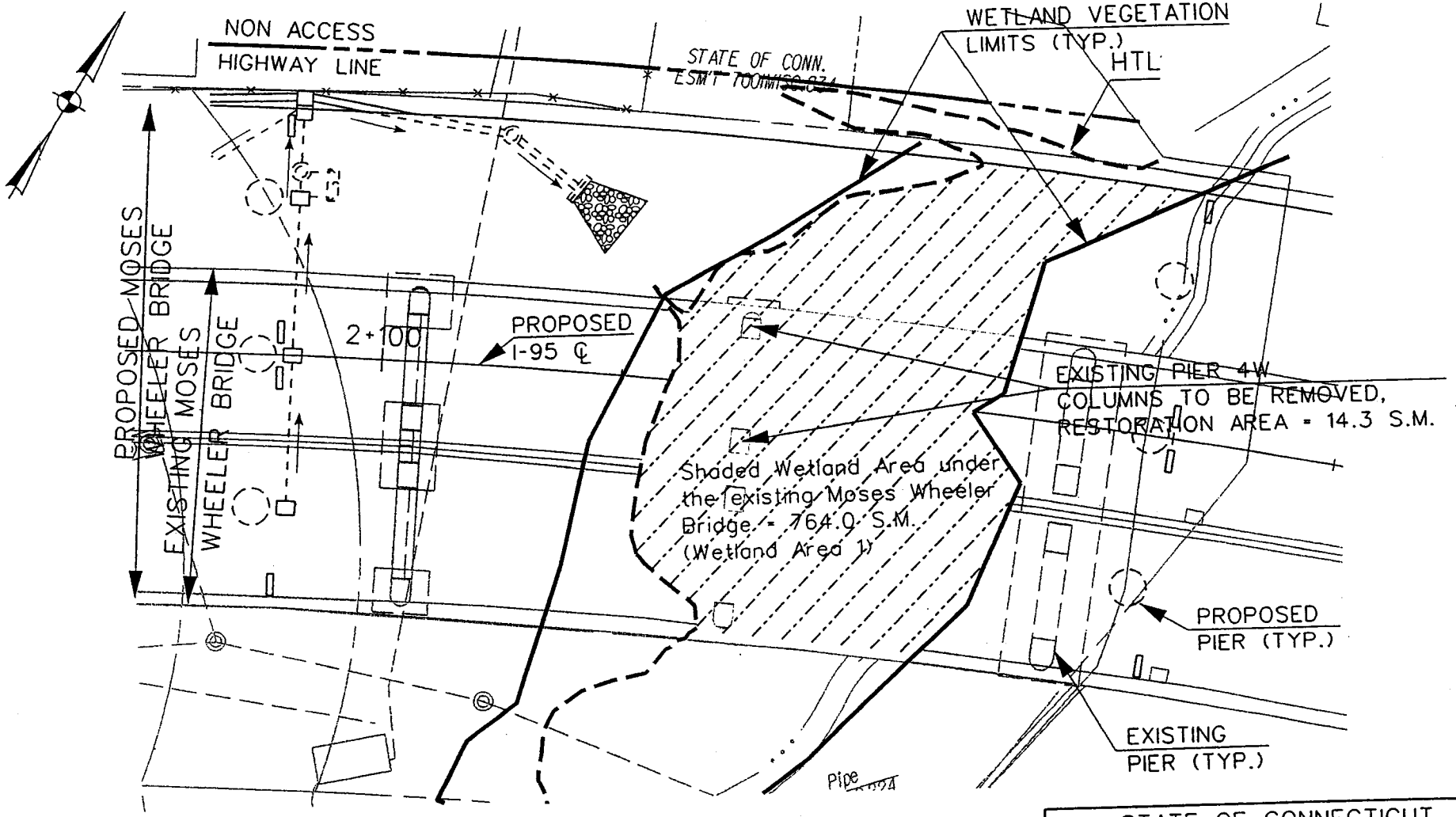
DATE: 11/22/06	SHADOW IMPACT AREAS UNDER MOSES WHEELER BRIDGE	FIG. M-1



PLAN
SCALE 1:500

LEGEND

SHADOW AREA IN WETLANDS UNDER EXISTING BRIDGE, AREA = 764.0 S.M.

SHADOW AREA IN WETLANDS UNDER NEW BRIDGE, AREA = 1081.9 S.M.

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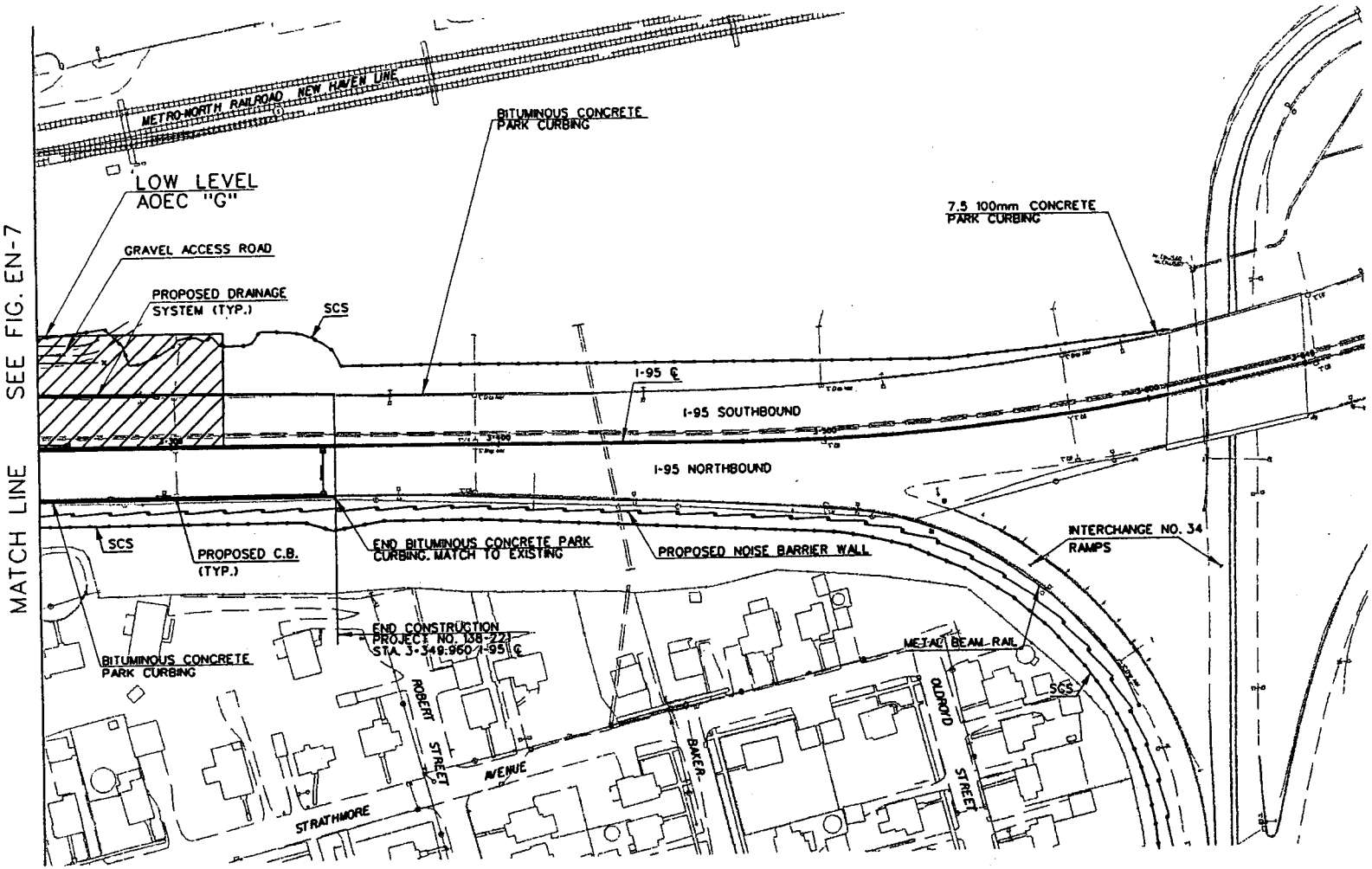
DATE: 11/22/06	SHADOW IMPACT AREAS UNDER MOSES WHEELER BRIDGE	FIG. S-1



AREAS OF ENVIRONMENTAL CONCERN

SCALE: 1:2000

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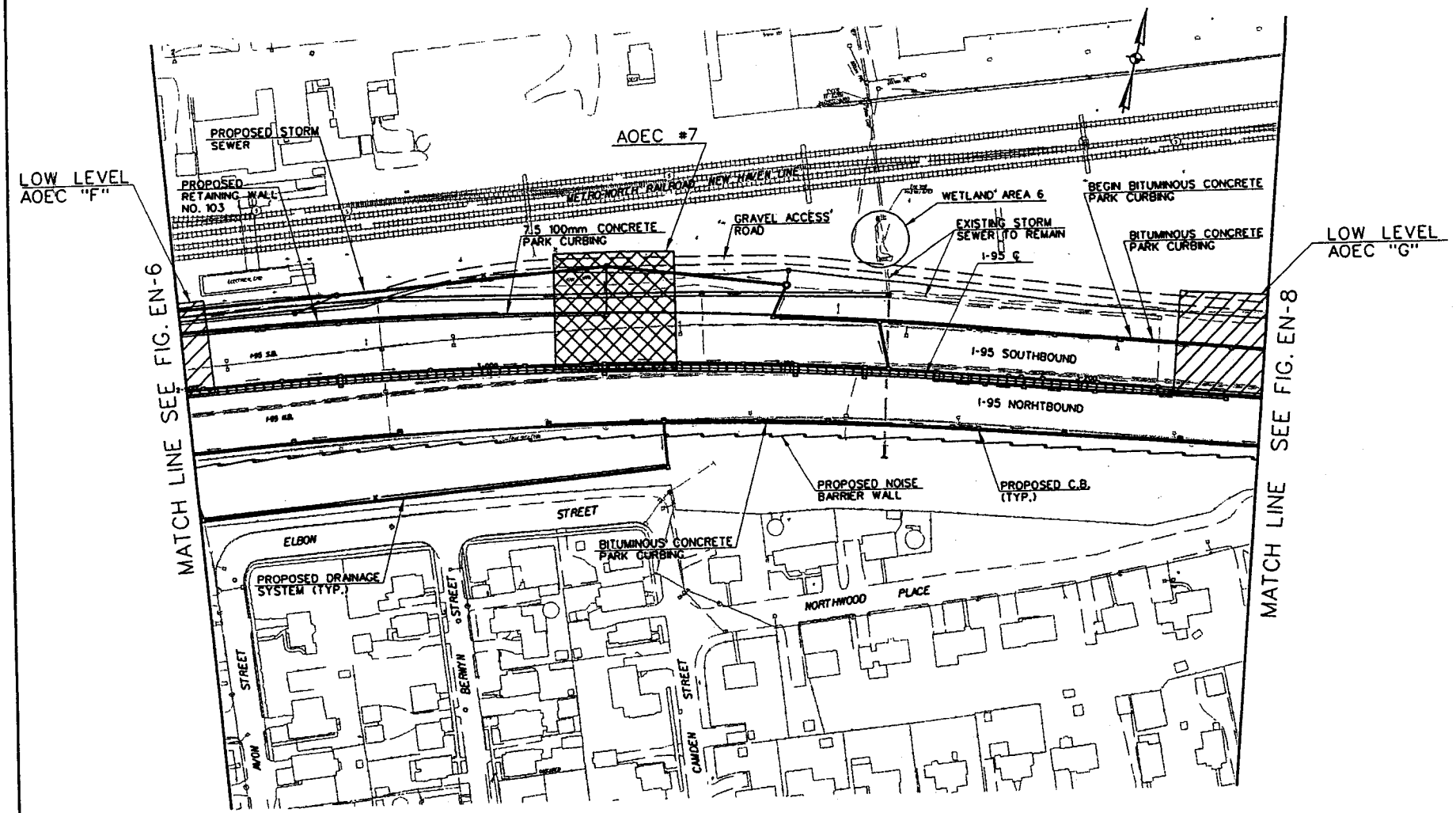
DATE: 11/11/05	AREA OF ENVIRONMENTAL CONCERN	FIG. EN-8



AREAS OF ENVIRONMENTAL CONCERN

SCALE: 1"=200'

STATE OF CONNECTICUT
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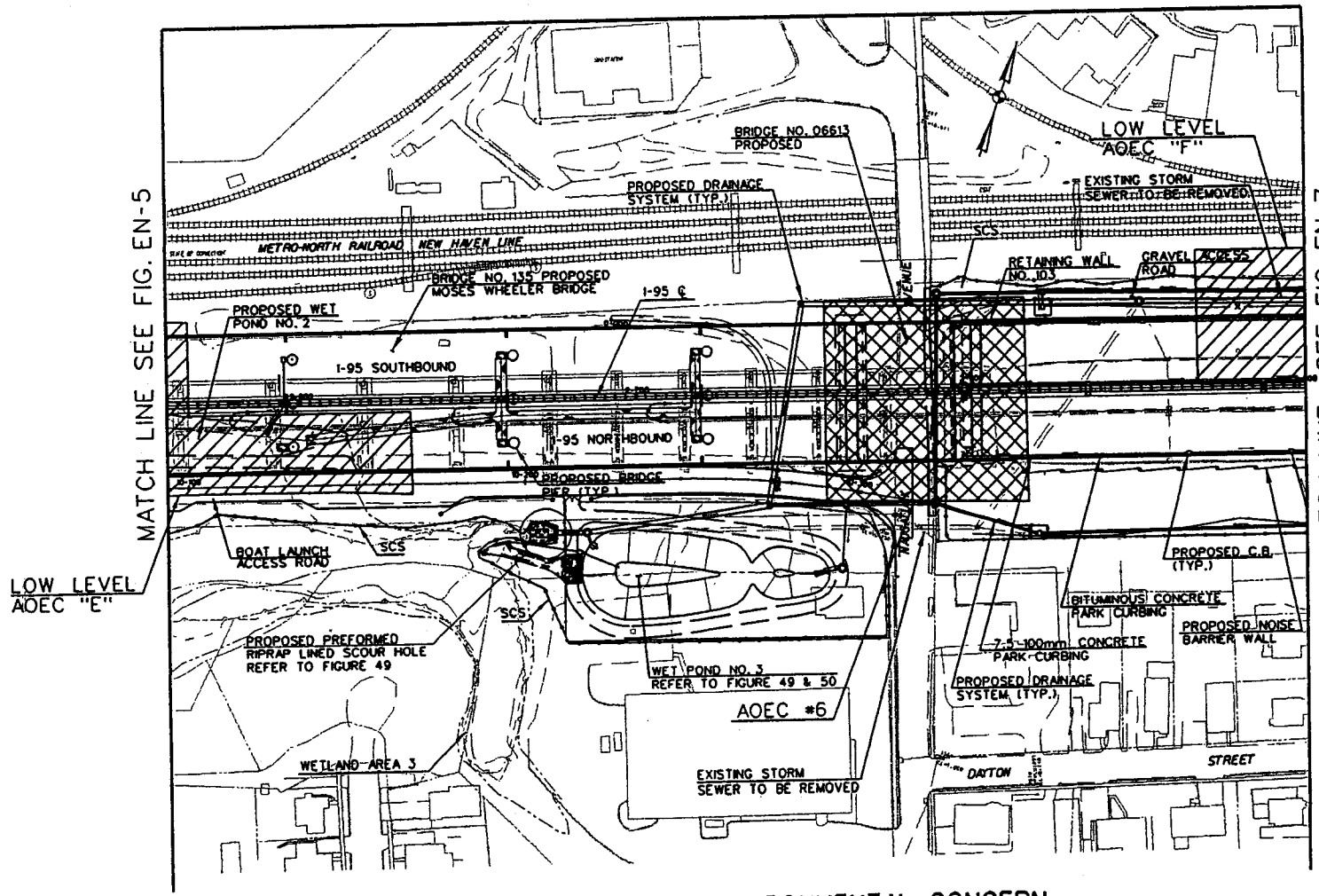
DATE: 11/11/05	AREA OF ENVIRONMENTAL CONCERN	FIG. EN-7



AREAS OF ENVIRONMENTAL CONCERN

SCALE: 1:2000

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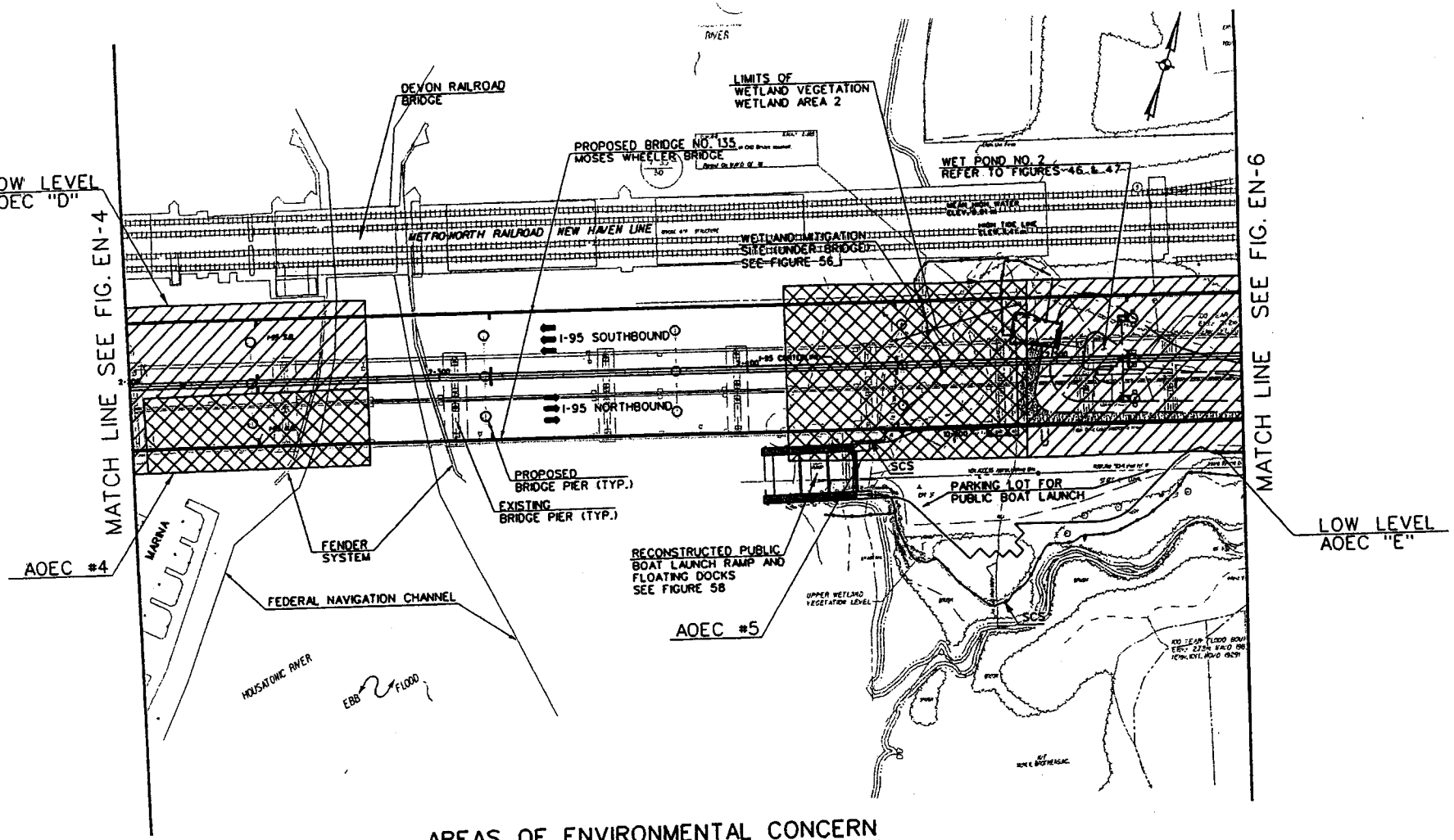
DATE: 11/11/05	AREA OF ENVIRONMENTAL CONCERN	FIG. EN-6



AREAS OF ENVIRONMENTAL CONCERN

SCALE: 1"=200'

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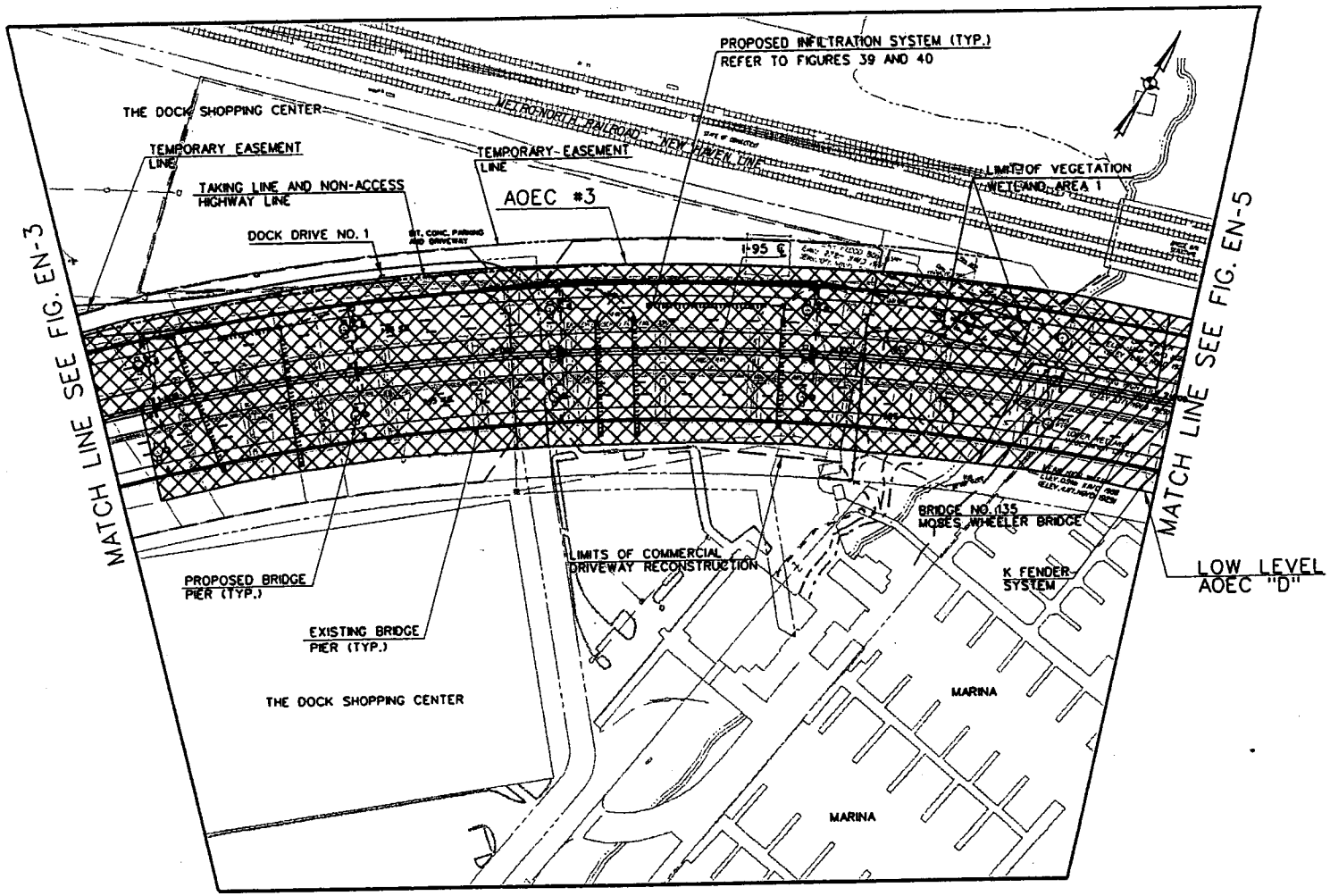
DATE: 11/11/05	AREAS OF ENVIRONMENTAL CONCERN	FIG. EN-5



AREA OF ENVIRONMENTAL CONCERN

SCALE: 1"=200'

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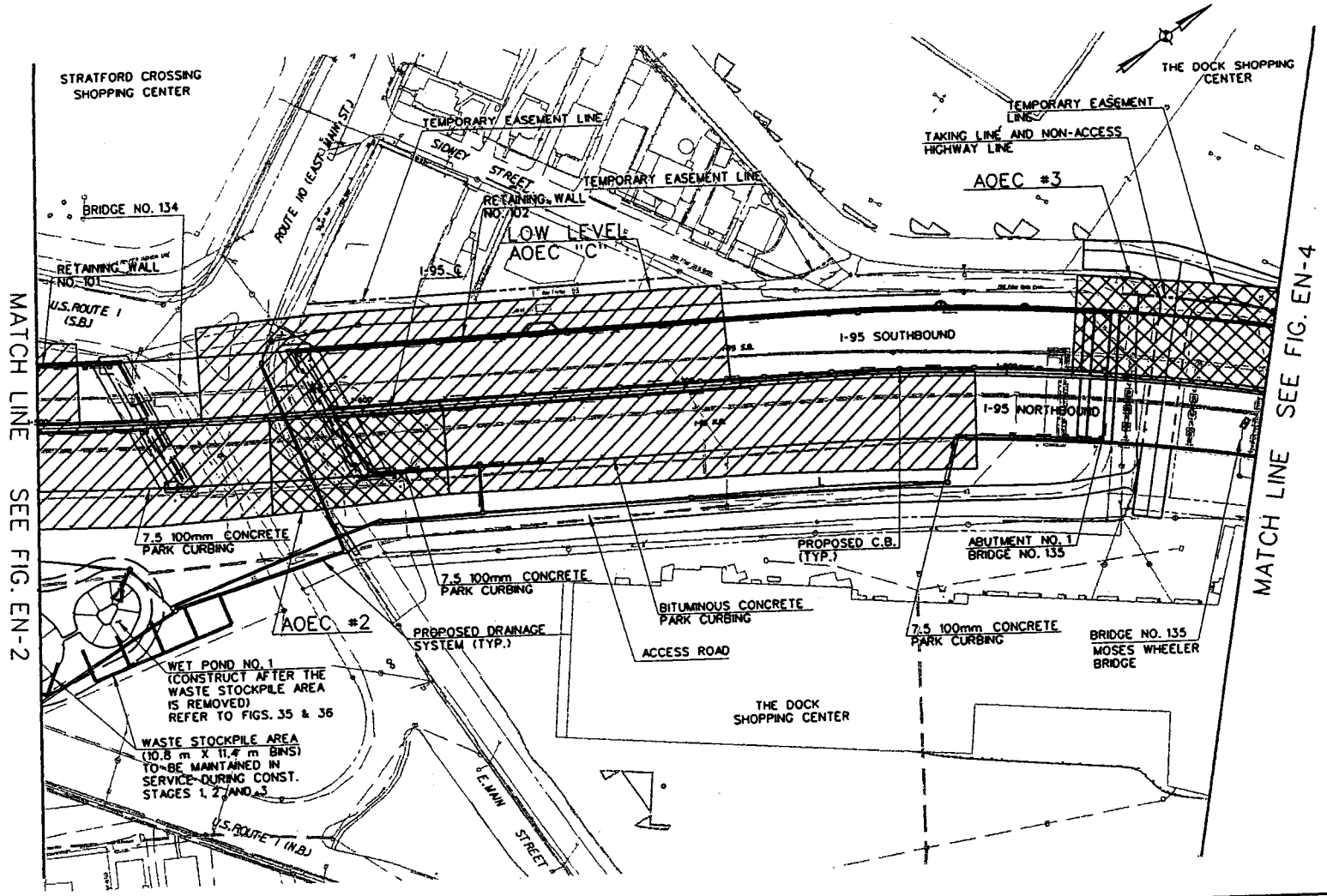
DATE: 11/11/05	AREA OF ENVIRONMENTAL CONCERN	FIG. EN-4



AREA OF ENVIRONMENTAL CONCERN

SCALE: 1:2000

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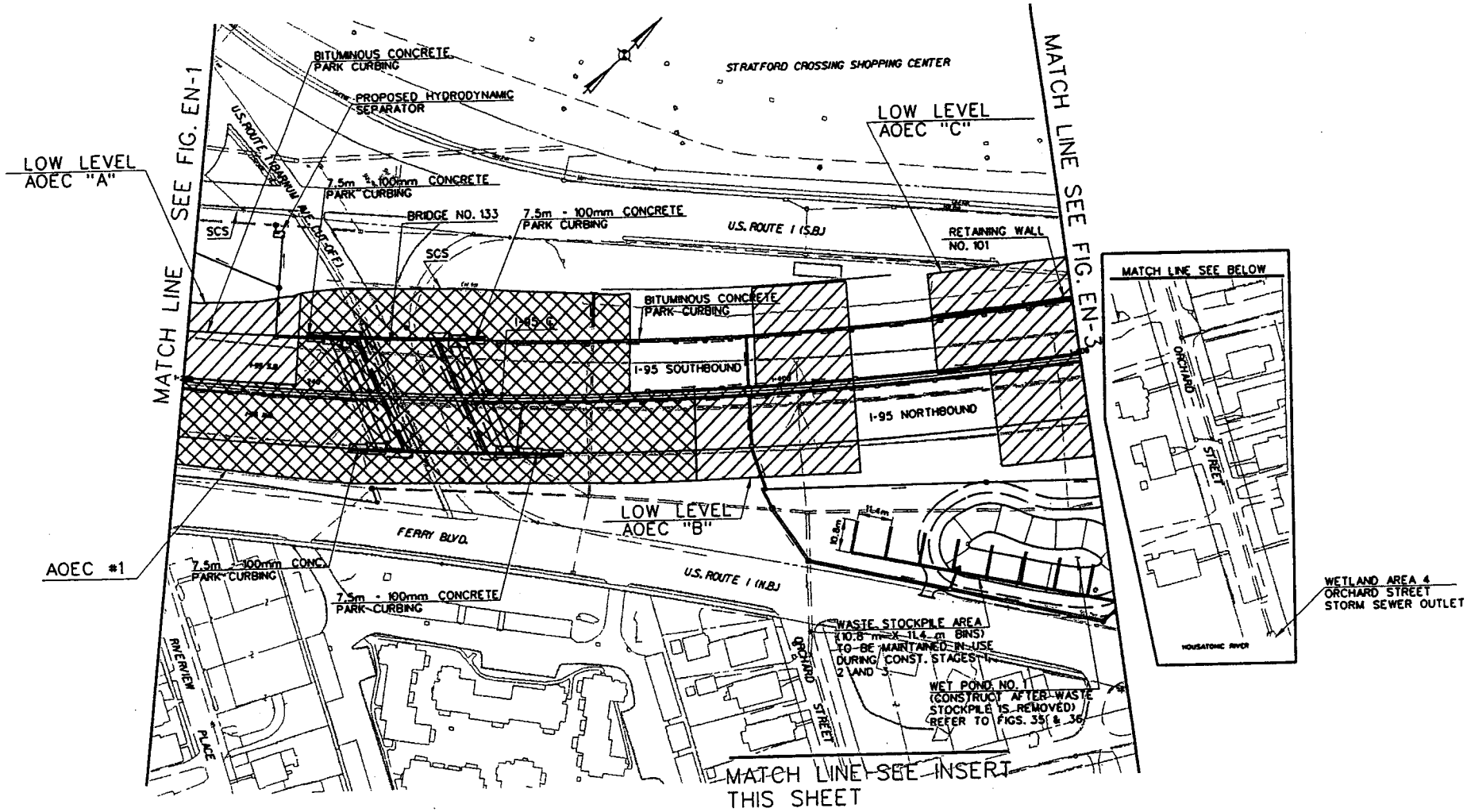
DATE: 11/11/05	AREA OF ENVIRONMENTAL CONCERN	FIG. EN-3



AREAS OF ENVIRONMENTAL CONCERN

SCALE: 1"=200'

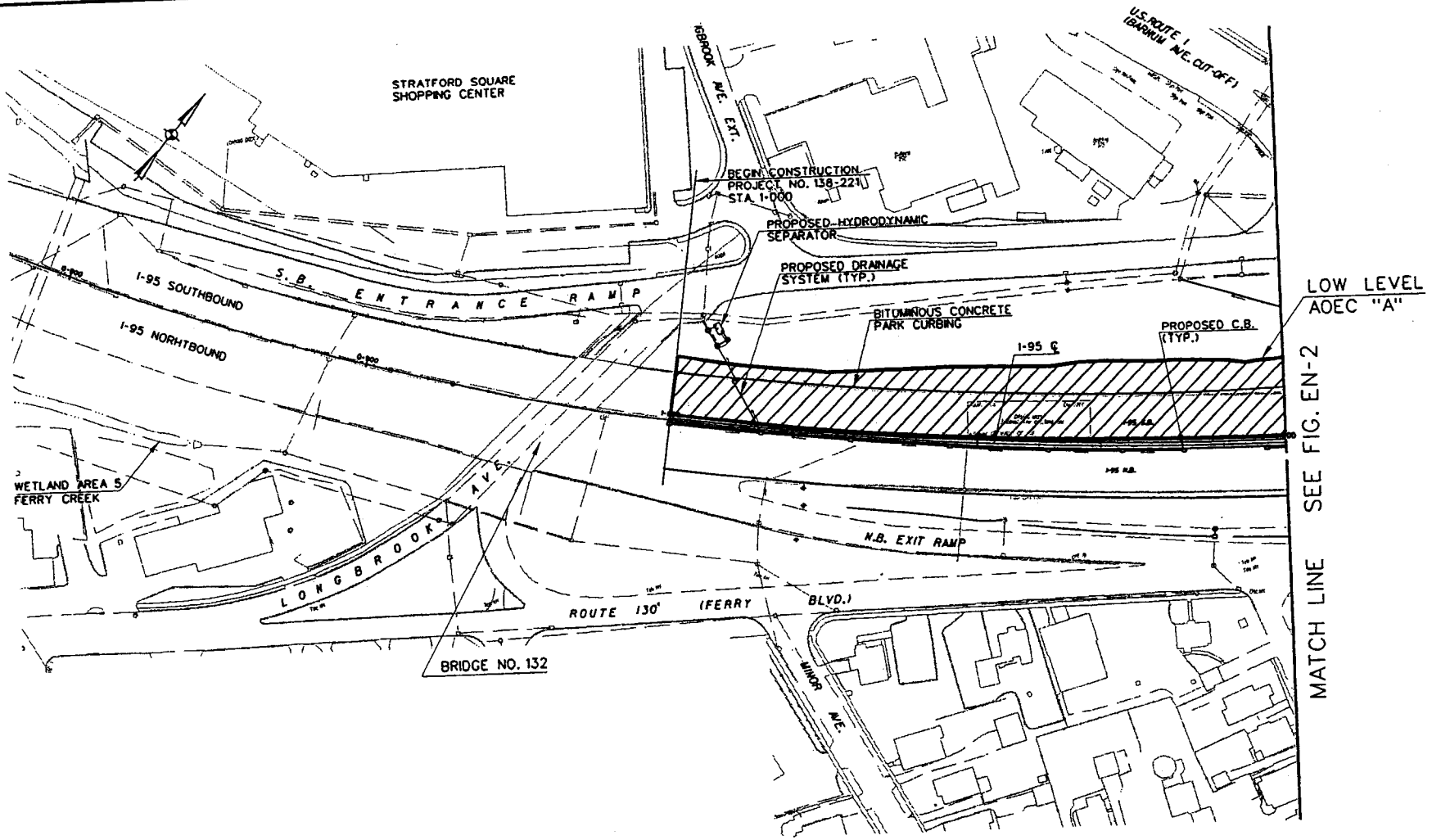
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

STRATFORD/MILFORD

REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER
PROJECT NO. 138-221

STV Incorporated
ENGINEERS AND PLANNERS
80 Ferry Boulevard
Stratford, CT 06615

DATE: 11/11/05	AREAS OF ENVIRONMENTAL CONCERN	FIG. EN-2



AREAS OF ENVIRONMENTAL CONCERN

SCALE: 1"=2000

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ERECTION NOTES: FOR ERECTION SCHEMATIC SHEET 11 (FIG. ES-11)

STAGE 13

13.1 WITH GANTRY POSITIONED AT PIERS 10 AND 11 READY GANTRY FOR PIER 11 CANTILEVER ERECTION.

13.2 ERECT CANTILEVERS AT EXPANSION PIER 11 AND CAST CLOSURE JOINT IN SPAN 11 FOLLOWING PROCEDURE FROM STEPS 6.1 THRU 6.15.

13.3 REPEAT STAGE 5 AND 6 FOR CANTLEVER ERECTION AT PIERS 12 AND 13 AND CLOSURE JOINTS IN SPAN 12 AND 13. (NOTE: FINAL SEGMENT PAIR P12-10 REQUIRE PERMANENT CANTILEVER TENDONS 111).

STAGE 14

14.1 ASSEMBLE TEMPORARY FALSEWORK AT ABUTMENT END OF SPAN 2.

14.2 PLACE SEGMENT P13-U14 ON TEMPORARY FALSEWORK (NOTE: SEGMENTS P13-U14, P13-U15 AND P13-U16 ARE MATCH-CAST WITH SEGMENTS P13-U13, P13-U14, AND P13-U15 RESPECTIVELY). ADJUST ALIGNMENT AND ELEVATION. APPLY EPOXY TO JOINT FACE OF SEGMENT. COMPRESS EPOXY BETWEEN SEGMENTS P13-U14 AND P13-U13 WITH TEMPORARY POST-TENSIONING BARS.

14.3 REPEAT STEP 13.2 PROCEDURE FOR THE REMAINING PRECAST SEGMENTS IN SPAN 14.

14.4 SET IN PLACE PERMANENT BEARINGS AT ABUTMENT 2. CAST-IN-PLACE ABUTMENT SEGMENT A2 OVER BEARINGS AND MATCH CAST AGAINST SEGMENT P13-U16.

14.5 WHEN ABUTMENT SEGMENT A2 CONCRETE HAS REACHED A STRENGTH OF 24.5 MPA STRESS SPAN 14 CONTINUITY TENDONS 201 THRU 203.

STAGE 15

15.1 RELOCATE GANTRY TO WEST END OF BRIDGE TO BEGIN ERECTION OF SOUTH GIRDER.

15.2 REPEAT STAGES 1 THRU 14 FOR ERECTION OF SOUTH GIRDER .

STAGE 16

16.1 RELOCATE GANTRY TO WEST END OF BRIDGE TO BEGIN ERECTION OF MIDDLE GIRDER.

16.2 REPEAT STAGES 1 THRU 13 FOR ERECTION OF MIDDLE GIRDER .

STAGE 17

17.1 CAST-IN-PLACE LONGITUDINAL CLOSURE STRIP BETWEEN MIDDLE GIRDER AND EXTERIOR GIRDERS .

17.2 WHEN LONGITUDINAL CLOSURE STRIP CONCRETE HAS REACHED A STRENGTH OF 24.5 MPA, STRESS CLOSURE STRIP TENDONS.

NOTE:

REFER TO FIGURES 14 AND 15 FOR SITE VICINITY PLAN.

ALL CONSTRUCTION OCCURS AT THE BRIDGE DECK ELEVATION.

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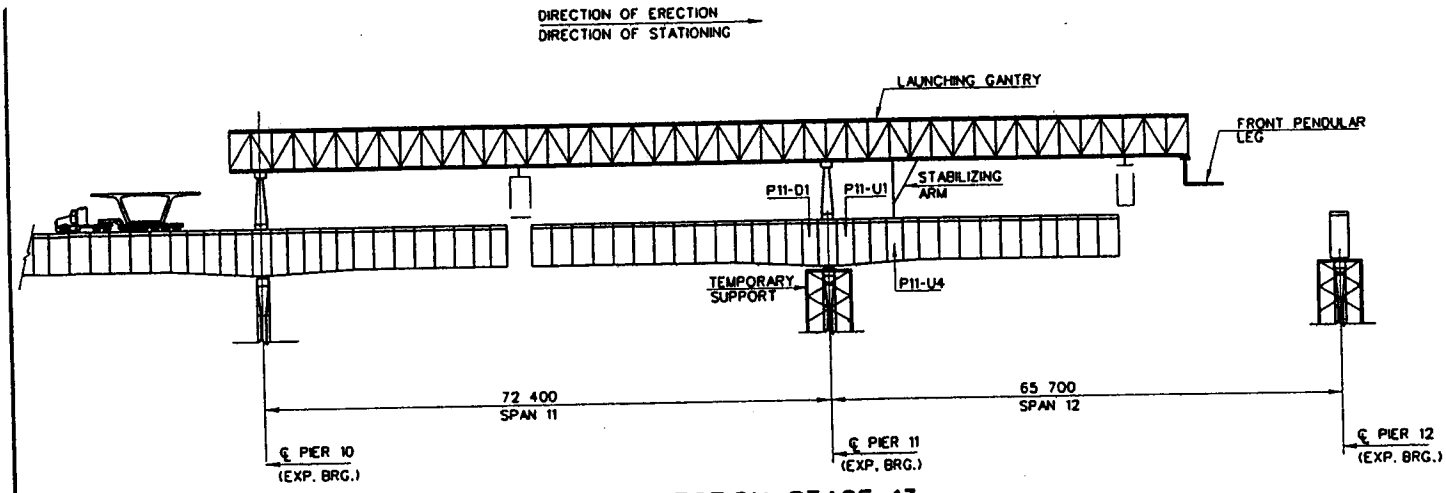
DATE: 11/11/05 | ERECTION SCHEMATIC SHEET 12 | FIG.ES-12



ERECTION STAGE 13

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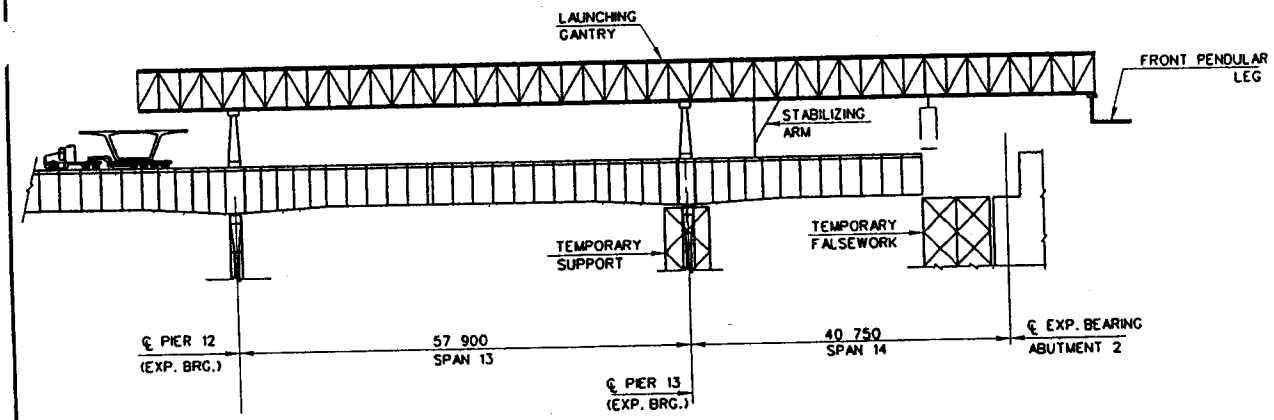

ERECTION STAGE 14

N.T.S.

SEE NOTES ON
ERECTION SCHEMATIC SHEET 12, FIG. ES-12

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DATE: 11/11/05 | ERECTION SCHEMATIC SHEET 11 | FIG. ES-11

ERECTION NOTES: FOR ERECTION SCHEMATIC SHEET 9 (FIG. ES-9)

STAGE 10

10.1 ADVANCE GANTRY SO THAT MOVABLE CENTER SUPPORT IS POSITIONED AT FIXED PIER 8 AND READY GANTRY FOR PIER 8 CANTILEVER ERECTION.

10.2 ERECT BALANCED CANTILEVERS AT FIXED PIER 8 FOLLOWING PROCEDURE FROM STEPS 6.1 THRU 6.11.

10.3 LOCK CANTILEVERS P8-D AND P7-U TOGETHER WITH TEMPORARY BLOCKING AND STRONGBACK SYSTEM AT SPAN 8 CLOSURE JOINT.

10.4 ZERO OUT FORCES IN STABILIZER ARM AT SEGMENT P8-U4 BUT DO NOT DISENGAGE.

10.5 CAST CLOSURE JOINT IN SPAN 8.

10.6 WHEN CLOSURE JOINT CONCRETE HAS REACHED A STRENGTH OF 24.5 MPA STRESS CONTINUITY TENDONS 201. (NOTE: SPAN 8 CONTINUITY TENDONS 202 THRU 205 ARE NOT STRESSED UNTIL AFTER CLOSURE IS MADE IN SPAN 7).

10.7 REPEAT STEPS 6.1 THRU 6.13 FOR CANTILEVER ERECTION AT FIXED PIER 9.

10.8 CAST CLOSURE JOINT IN SPAN 9. WHEN CLOSURE JOINT CONCRETEHAS REACHED A STRENGTH OF 24.5 MPA STRESS CONTINUITY TENDONS 201. (NOTE: SPAN 9 CONTINUITY TENDONS 202 THRU 207 ARE NOT STRESSED UNTIL AFTER CLOSURE IS MADE IN SPAN 7).

10.9 DISENGAGE STABILIZER ARM FROM SEGMENT P9-U4.

STAGE 11

11.1 AT EXPANSION PIER 10 SET BEARINGS AND TEMPORARILY RESTRAIN AGAINST HORIZONTAL TRANSLATION AND ROTATION WITH TEMPORARY SUPPORTS AND/OR TIE-DOWNS DURING ERECTION OF CANTILEVER.

11.2 ADVANCE GANTRY SO THAT MOVABLE CENTER SUPPORT IS POSITIONED AT EXPANSION PIER 10 AND READY GANTRY FOR PIER 10 CANTILEVER ERECTION.

11.3 ERECT CANTILEVERS AT EXPANSION PIER 10 FOLLOWING PROCEDURE FROM STEPS 6.1 THRU 6.11. DO NOT LOCK CANTILEVERS P10-D AND P9-U TOGETHER AT THIS TIME.

STAGE 12

12.1 WITH GANTRY POSITIONED AT PIERS 10 AND 11, DE-STRESS TEMPORARY TOP POST-TENSIONING BARS AT SPAN 7 MIDSPAN CLOSURE JOINT. DE-STRESS TEMPORARY CONTINGENCY TENDONS AND REMOVE TEMPORARY CLOSURE JOINT BLOCKING.

12.2 JACK CANTILEVERS P7-D AND P6-U APART IN SPAN 7 USING THE LOADS AND PROCEDURE SPECIFIED ON THE JACKING DETAIL. LOCK-OFF JACKS AND CAST CLOSURE.

12.3 WHEN CLOSURE JOINT CONCRETE HAS REACHED STRENGTH OF 24.5MPA, STRESS SPAN 7 PERMANENT CONTINUITY TENDONS 201 THRU 207. STRESS PERMANENT 35mm POST-TENSIONING BARS AT SPAN 7 MIDSPAN CLOSURE JOINT.

12.4 STRESS CONTINUITY TENDONS 202 THRU 207 IN SPAN 6. STRESS CONTINUITY TENDONS 202 THRU 205 IN SPAN 8. STRESS CONTINUITY TENDONS 202 THRU 207 IN SPAN 9.

NOTE:

REFER TO FIGURES 13 AND 14 FOR SITE VICINITY PLAN.

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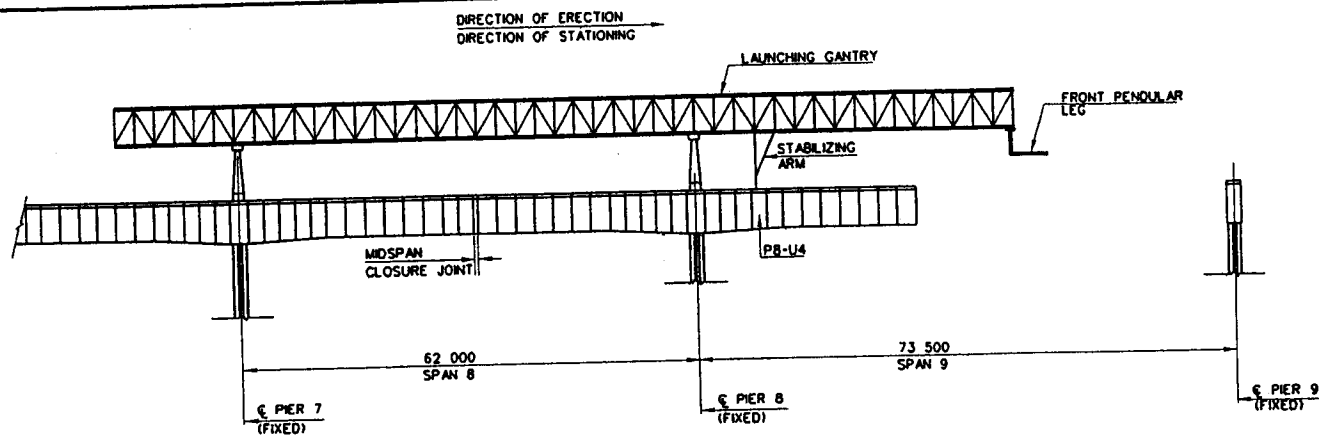
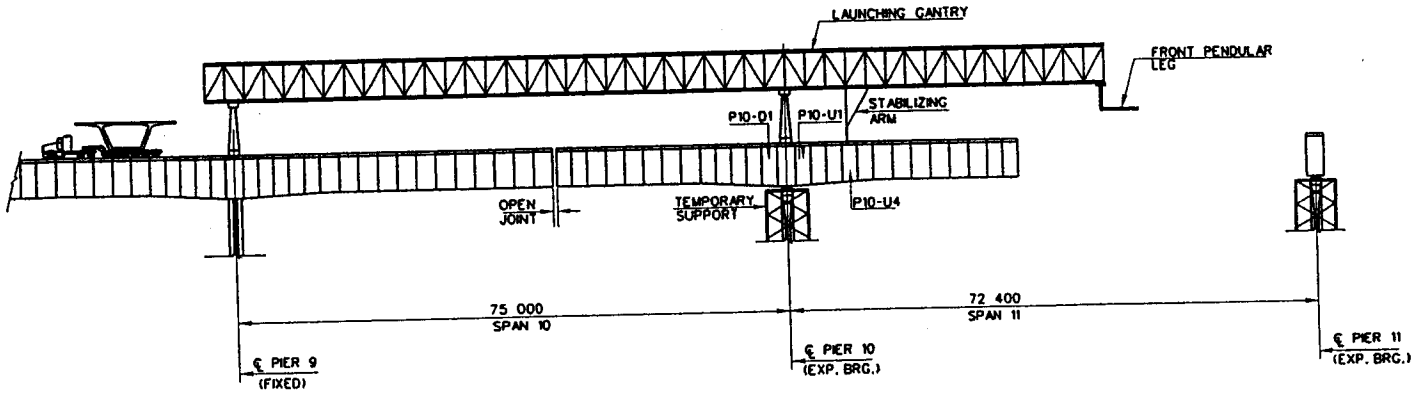
PROJECT NO. 138-221

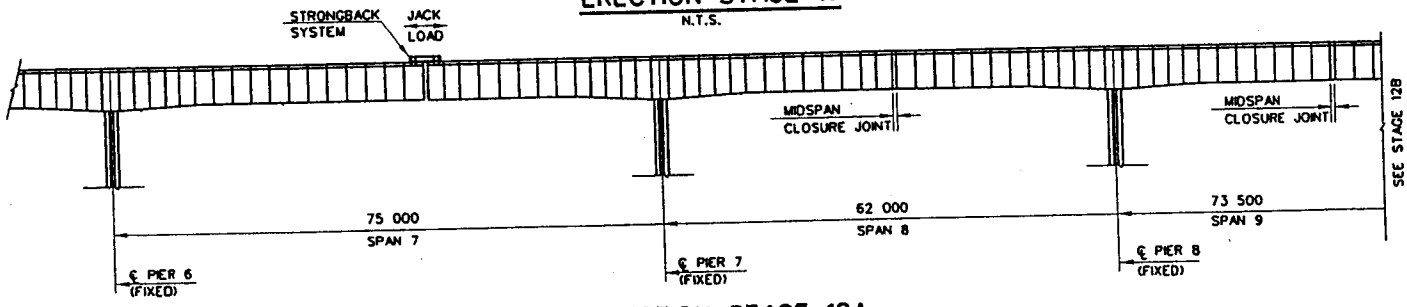
DATE: 11/11/05	ERECTION SCHEMATIC SHEET 10	FIG.ES-10



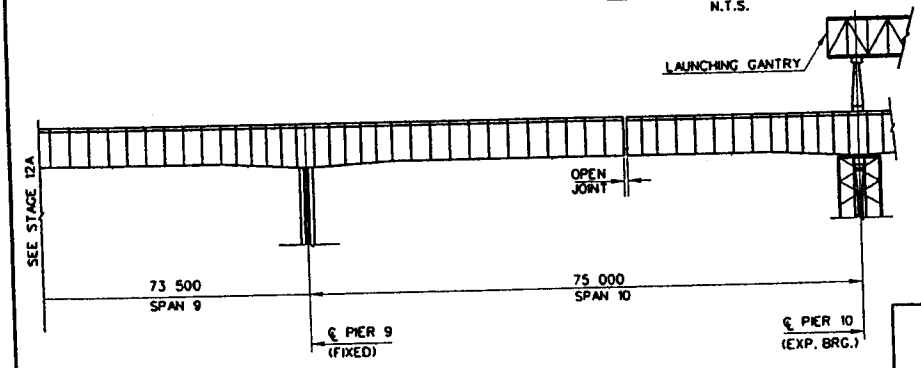
ERECTION STAGE 10
N.T.S.



ERECTION STAGE 11
N.T.S.



ERECTION STAGE 12A
N.T.S.



ERECTION STAGE 12B
N.T.S.

SEE NOTES ON ERECTION SCHEMATIC SHEET 10, FIG. ES-10

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REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER PROJECT NO. 138-221

DATE: 11/11/05 | ERECTION SCHEMATIC SHEET 9 | FIG. ES-9

ERECTION NOTES: FOR ERECTION SCHEMATIC SHEET 7 (FIG. ES-7)

STAGE 7

7.1 ADVANCE GANTRY SO THAT MOVABLE CENTER SUPPORT IS POSITIONED AT FIXED PIER 5 AND READY GANTRY FOR PIER 5 CANTILEVER ERECTION.

7.2 REPEAT STEPS 6.1 THRU 6.15 FOR BALANCED CANTILEVER CONSTRUCTION AT PIER 5 AND MID-SPAN CLOSURE IN SPAN 5

7.3 UNLOCK BEARINGS AT ABUTMENT NO. 1

7.4 DISENGAGE STABILIZER ARM FROM SEGMENT P5-U4.

STAGE 8

8.1 ADVANCE GANTRY UNTIL MOVABLE CENTER SUPPORT IS POSITIONED AT PIER 6 AND READY GANTRY FOR PIER 6 CANTILEVER ERECTION.

8.2 REPEAT STEPS 6.1 THRU 6.15 FOR BALANCED CANTILEVER CONSTRUCTION AT FIXED PIER 6 AND MID-SPAN CLOSURE IN SPAN 6.

STAGE 9

9.1 ERECT BALANCED CANTILEVER AT FIXED PIER 7 FOLLOWING PROCEDURE FROM STEPS 6.1 THRU 6.15. USE STRONGBACK SYSTEM TO LOCK TOGETHER UPSTATION CANTILEVER AT PIER 6 AND DOWNSTATION CANTILEVER AT PIER 7, BUT DO NOT CAST CLOSURE JOINT AT THIS TIME.

9.2 ZERO OUT FORCE IN STABILIZER ARM AT SEGMENT P7-U4, BUT DO NOT DISENGAGE.

9.3 POSITION PRECAST COMPRESSION BLOCKS BETWEEN SEGMENTS P6-U17 AND P7-D13, USE TEMPORARY P.T. BARS TO JOIN ASSEMBLY AND GROUT IN PLACE. (SEE TEMPORARY BLOCKING AT JACKING CLOSURES FOR DETAILED PROCEDURE).

9.4 STRESS TEMPORARY POST-TENSIONING TENDONS IN ACCORDANCE WITH DETAILED PROCEDURE.

9.5 PLACE 25mm PLATE OVER THE CLOSURE JOINT AND FASTEN TO DECK

9.6 RELEASE STABILIZER ARM AT SEGMENT P7-U4.

NOTE:

REFER TO FIGURE 13 FOR SITE VICINITY PLAN.

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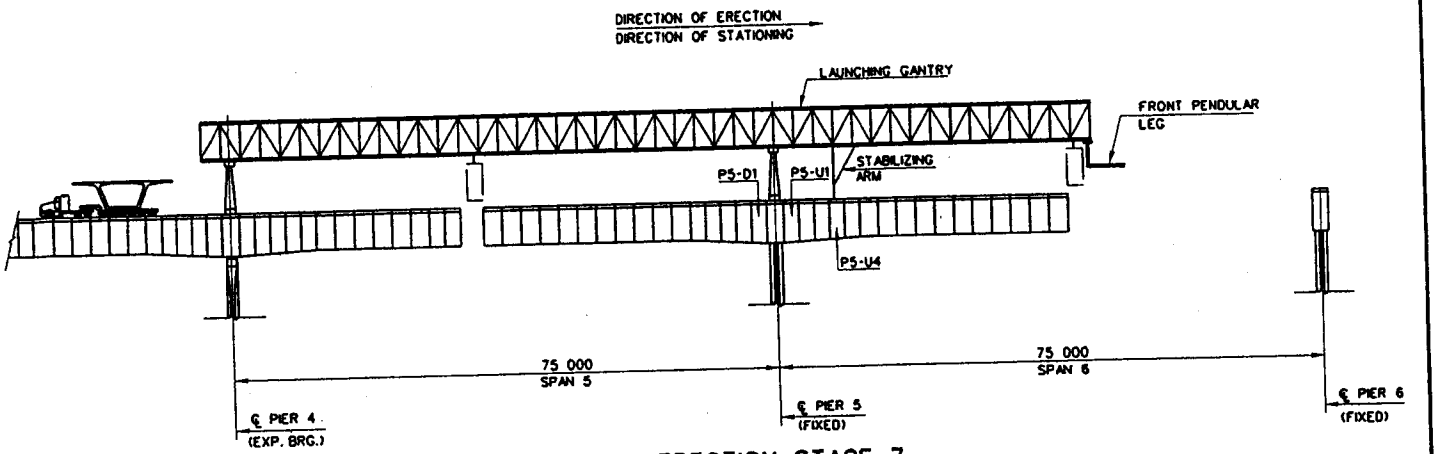
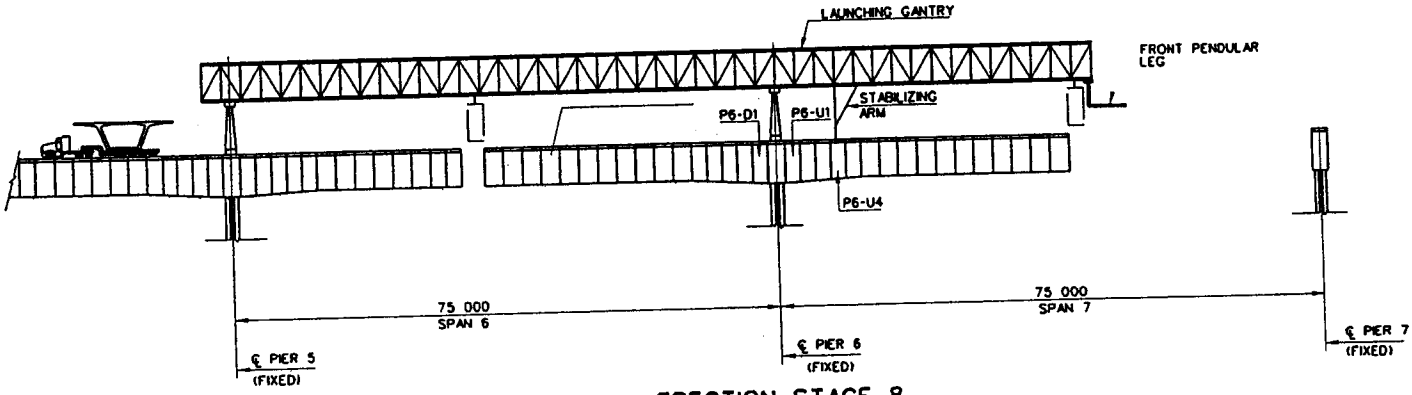
PROJECT NO. 138-221

DATE: 11/11/05	ERECTION SCHEMATIC SHEET 8	FIG.ES-8



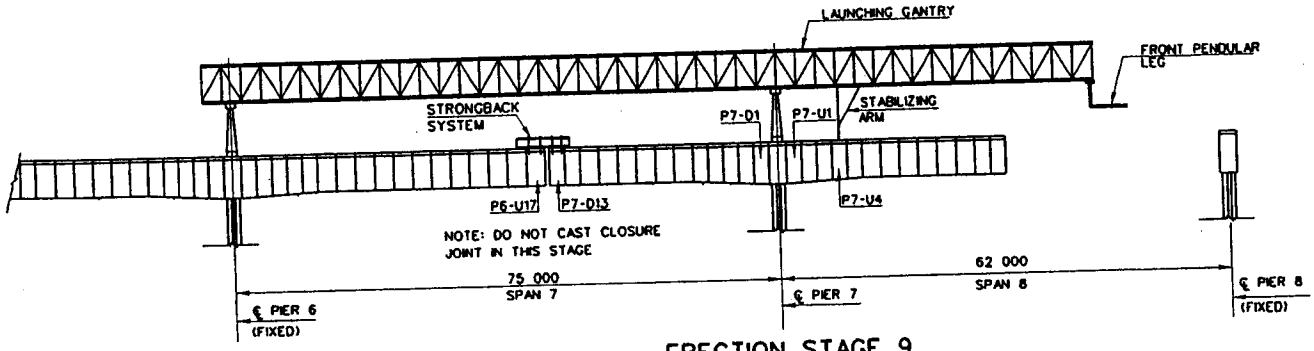
ERECTION STAGE 7

N.T.S.



ERECTION STAGE 8

N.T.S.



ERECTION STAGE 9

N.T.S.

SEE NOTES ON
ERECTION SCHEMATIC SHEET 8, FIG. ES-8, FIGURE ES-8.

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DATE: 11/11/05 | ERECTION SCHEMATIC SHEET 7 | FIG. ES-7

ERECTION NOTES: FOR ERECTION SCHEMATIC SHEET 5 (FIG. ES-5)

STAGE 6

6.1 SUSPEND STARTER SEGMENT P2-U1 FROM GANTRY ON UP-STATION SIDE OF PIER 2. BLOCK STARTER SEGMENT CLOSURE JOINT, USE TEMPORARY POST-TENSIONING BARS TO ADJUST SEGMENT ELEVATION AND ALIGNMENT.

6.2 REPEAT STEP 6.1 FOR STARTER SEGMENT P2-D1 ON DOWN-STATION SIDE OF PIER 2.

6.3 CAST CLOSURE JOINTS BETWEEN PIER SEGMENT P2 AND STARTER SEGMENTS P2-U1 AND P2-D1.

6.4 WHEN STARTER SEGMENT CLOSURE JOINT CONCRETE HAS REACHED A STRENGTH OF 24.5 MPA, STRESS PERMANENT CANTILEVER TENDONS 101.

6.5 SUSPEND SEGMENT P2-U2 FROM GANTRY ON UP-STATION SIDE OF PIER 2. ADJUST SEGMENT ALIGNMENT AND ELEVATION. APPLY EPOXY TO JOINT FACE OF SEGMENT. COMPRESS EPOXY BETWEEN SEGMENTS P2-U2 AND P2-U1 USING TEMPORARY POST-TENSIONING BARS.

6.6 REPEAT STEPS 6.5 FOR SEGMENT P2-D2 ON DOWNSTATION SIDE OF PIER.

6.7 STRESS PERMANENT CANTILEVER TENDONS 102.

6.8 REPEAT STEPS 6.5 THRU 6.7 FOR SEGMENT PAIRS P2-3 AND P2-4. ALTERNATE SEGMENT ERECTION ON THE UPSTATION AND DOWNSTATION SIDES OF THE PIER WITH THE UPSTATION SEGMENT BEING ERECTED FIRST SO CANTILEVER IS NEVER MORE THAN ONE SEGMENT OUT-OF-BALANCE AT ANY TIME.

6.9 ATTACH GANTRY STABILIZER ARM TO SEGMENT P2-U4. RELEASE TEMPORARY ROTATIONAL RESTRAINT AT PIER 2. REMOVE TEMPORARY SUPPORT FRAME. (NOTE: RELEASE OF TEMPORARY ROTATIONAL RESTRAINT AND REMOVAL OF TEMPORARY SUPPORT FRAME APPLIES ONLY AT EXPANSION PIERS).

6.10 PROCEED WITH ERECTION OF SEGMENT PAIRS P2-5 THRU P2-12 IN ACCORDANCE WITH STEP 6.8 ABOVE.

6.11 ERECT SEGMENT PAIR P2-12 BY THE METHOD IN STEP 6.8. NOTE THAT THE FINAL SEGMENT PAIR P2-12 DO NOT REQUIRE PERMANENT CANTILEVER TENDONS AND ARE HELD IN PLACE BY TEMPORARY POST-TENSIONING BARS UNTIL CLOSURE IS MADE AT BOTH ENDS.

6.12 LOCK CANTILEVERS P2-D AND P1-U TOGETHER WITH STRONGBACK SYSTEM AT SPAN 2 CLOSURE JOINT.

6.13 ZERO OUT FORCES IN STABILIZER ARM AT SEGMENT P2-U4 BUT DO NOT DISENGAGE.

6.14 CAST CLOSURE JOINT IN SPAN 2. WHEN CLOSURE JOINT CONCRETE HAS REACHED A STRENGTH OF 24.5 MPA, STRESS CONTINUITY TENDONS 201 THRU 208. STRESS PERMANENT 35mm POST-TENSIONING BARS AT MID-SPAN CLOSURE JOINT. REMOVE STRONGBACK SYSTEM.

6.15 DISENGAGE STABILIZER ARM FROM SEGMENT P2-U4. (NOTE: STABILIZER ARM TO REMAIN ENGAGED AT SEGMENT P2-U4 UNTIL CLOSURE IS MADE AND CONTINUITY TENDONS ARE STRESSED IN SPAN 2.

6.16 REMOVE BEARING RESTRAINT AND TEMPORARY SUPPORT TOWERS AT PIER 2.

6.17 REPEAT STAGE 5 AND 6 FOR BALANCED CANTILEVER ERECTION AT EXPANSION PIERS 3 AND 4 AND MIDSPAN CLOSURE IN SPANS 2 AND 3.

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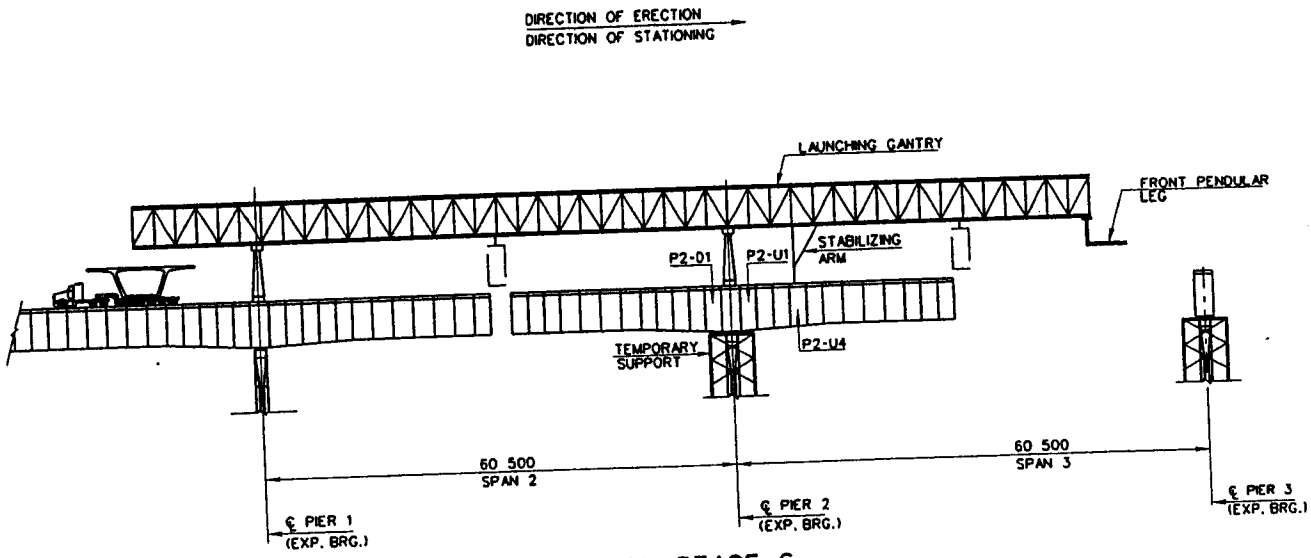
DATE: 11/11/05 | ERECTION SCHEMATIC SHEET 6 | FIG. ES-6



ERECTION STAGE 6

N.T.S.

SEE NOTES ON
ERECTION SCHEMATIC SHEET 6, FIG. ES-6

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DATE: 11/11/05	ERECTION SCHEMATIC SHEET 5	FIG. ES-5

ERECTION NOTES: FOR ERECTION SCHEMATIC SHEET 3 (FIG. ES-3)

STAGE 4

4.1 ASSEMBLE TEMPORARY FALSEWORK AT ABUTMENT END OF SPAN 1.

4.2 PLACE SEGMENT A1-U1 ON TEMPORARY FALSEWORK. ADJUST ALIGNMENT AND ELEVATION.

4.3 PLACE SEGMENT A1-U2 ON TEMPORARY FALSEWORK. ADJUST ALIGNMENT AND ELEVATION. APPLY EPOXY TO JOINT FACE OF SEGMENT. COMPRESS EPOXY BETWEEN SEGMENTS A1-U1 AND A1-U2 WITH TEMPORARY POST-TENSIONING BARS.

4.4 REPEAT STEP 4.3 PROCEDURE FOR THE REMAINING PRECAST SEGMENTS IN SPAN 1.

4.5 SET IN PLACE PERMANENT BEARINGS AT ABUTMENT 1. CAST-IN-PLACE ABUTMENT SEGMENT A1 OVER BEARINGS AND MATCH CAST AGAINST SEGMENT A1-U1.

4.6 LOCK CANTILEVER P1-D AND FALSEWORK SEGMENTS A1-U TOGETHER WITH STRONGBACK SYSTEM AT SPAN 1 CLOSURE JOINT.

4.7 CAST CLOSURE JOINT IN SPAN 1. WHEN CLOSURE JOINT CONCRETE HAS REACHED A STRENGTH OF 24.5 MPA, STRESS CONTINUITY TENDONS 201 THRU 208. STRESS 4-STRAND TOP SLAB TENDONS BETWEEN SEGMENT A1 AND P1-D12.

4.8 TEMPORARILY LOCK PERMANENT BEARINGS AGAINST HORIZONTAL MOVEMENT AT ABUTMENT 1. RELEASE STABILIZER ARM AT SEGMENT P1-U4. RELEASE TEMPORARY SUPPORT JACKS AND TEMPORARY HORIZONTAL RESTRAINT AT PIER 1.

4.9 REMOVE TEMPORARY SUPPORT TOWER AT PIER 1.

STAGE 5

5.1 AT PIER 2 SET BEARINGS AND TEMPORARILY RESTRAIN AGAINST HORIZONTAL TRANSLATION AND ROTATION WITH TEMPORARY SUPPORTS AND/OR TIE-DOWNS DURING ERECTION OF CANTILEVER

5.2 ADVANCE GANTRY SO THAT CENTER SUPPORT IS POSITIONED AT PIER 2 AND READY GANTRY FOR PIER 2 BALANCED CANTILEVER ERECTION.

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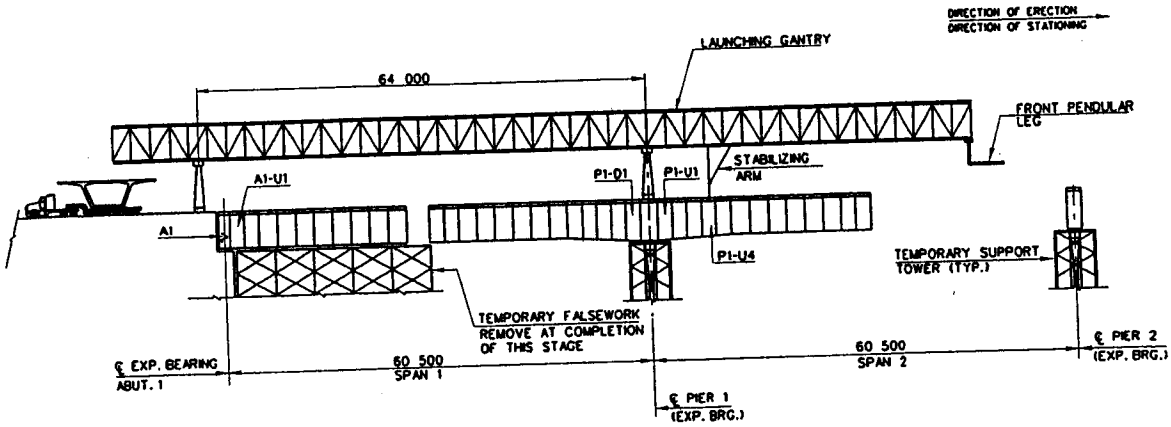
DATE: 11/11/05 | ERECTION SCHEMATIC SHEET 4 | FIG. ES-4



ERECTION STAGE 4

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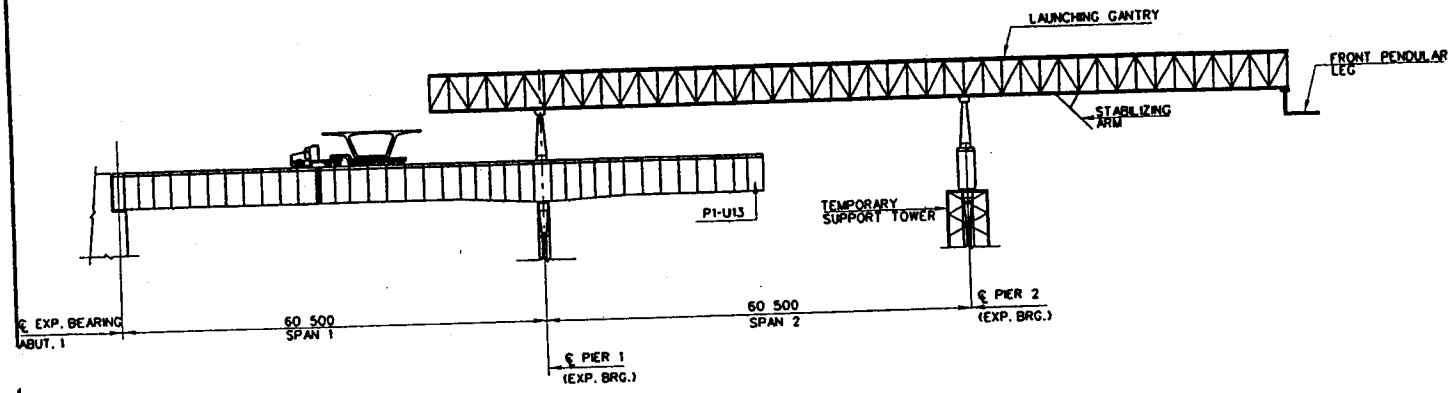

ERECTION STAGE 5

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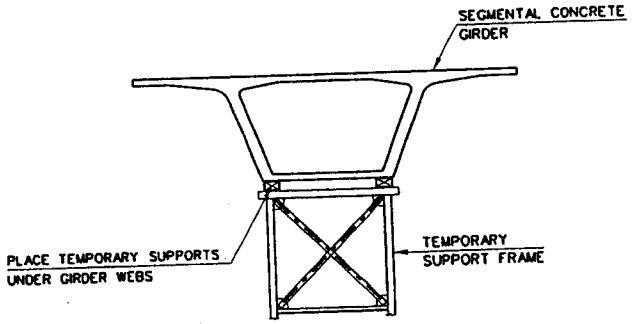

SECTION AT TEMPORARY SUPPORT

N.T.S.

SEE NOTES ON
ERECTION SCHEMATIC SHEET 4, FIG. ES-4

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DATE: 11/11/05 | ERECTION SCHEMATIC SHEET 3 | FIG. ES-3

ERECTION NOTES: FOR ERECTION SCHEMATIC SHEET 1 (FIG. ES-1)

STAGE 1

1.1 CAST PIER SEGMENTS IN PLACE DURING CONSTRUCTION OF SUBSTRUCTURE. AT EXPANSION PIERS 1, 2, 3, 4, 10, 11, 12 AND 13, TEMPORARY SUPPORT TOWERS ARE NECESSARY TO STABILIZE THE STRUCTURE DURING CANTILEVER ERECTION (NOTE: DESIGN OF SUPPORT TOWERS AND STABILITY OF STRUCTURE DURING ERECTION ARE THE RESPONSIBILITY OF THE CONTRACTOR)

1.2 SET BEARINGS AND TEMPORARILY RESTRAIN THE SAME AGAINST HORIZONTAL TRANSLATION AND ROTATION WITH TEMPORARY SUPPORTS AND/OR TIE-DOWNS DURING ERECTION OF CANTILEVER.

1.3 ADVANCE GANTRY SO THAT CENTER SUPPORT IS POSITIONED AT PIER 1 AND READY GANTRY FOR PIER 1 BALANCED CANTILEVER ERECTION.

STAGE 2

2.1 SUSPEND STARTER SEGMENT P1-U1 FROM GANTRY ON UP-STATION SIDE OF PIER 1. POSITION SEGMENT ON TEMPORARY SUPPORT FRAME AND BLOCK CLOSURE JOINT. USE TEMPORARY POST-TENSIONING BARS AND TEMPORARY SUPPORT JACKS TO ADJUST SEGMENT ELEVATION AND ALIGNMENT.

2.2 REPEAT STEP 2.1 FOR STARTER SEGMENT P1-D1 ON DOWN-STATION SIDE OF PIER 1.

2.3 CAST CLOSURE JOINTS BETWEEN PIER SEGMENT P1 AND STARTER SEGMENTS P1-U1 AND P1-D1.

2.4 WHEN STARTER SEGMENT CLOSURE JOINT CONCRETE HAS REACHED A STRENGTH OF 24.5 MPA, STRESS PERMANENT CANTILEVER TENDONS 101. RELIEVE FORCE IN SUPPORT JACK ON UPSTATION SIDE OF PIER AND READJUST UNTIL JUST SNUG.

STAGE 3

3.1 BEGINNING WITH THE UPSTATION SIDE OF PIER, SUSPEND SEGMENT P1-U2 FROM GANTRY. ADJUST SEGMENT ALIGNMENT AND ELEVATION. APPLY EPOXY TO JOINT FACE OF SEGMENT. COMPRESS EPOXY BETWEEN SEGMENTS P1-U2 AND P1-U1 USING TEMPORARY POST-TENSIONING BARS.

3.2 REPEAT STEP 3.1 FOR SEGMENT P1-D2 ON DOWNSTATION SIDE OF PIER.

3.3 STRESS PERMANENT CANTILEVER TENDONS 102. RELIEVE FORCE IN SUPPORT JACK ON UPSTATION SIDE OF PIER AND READJUST UNTIL JUST SNUG.

3.4 REPEAT STEPS 3.1 THRU 3.3 FOR SEGMENT PAIRS P1-3 THRU P1- 4. ALTERNATE SEGMENT ERECTION ON THE UPSTATION AND DOWSTATION SIDES OF THE PIER WITH THE UPSTATION SEGMENT ERECTED FIRST. AT ANY ONE TIME THE CANTILEVER SHALL NEVER BE MORE THAN ONE SEGMENT OUT OF BALANCE.

3.5 ATTACH GANTRY STABILIZER ARM TO SEGMENT P1-U4.

3.6 PROCEED WITH ERECTION OF SEGMENT PAIRS P1-5 THROUGH P1-13 FOLLOWING STEP 3.4 PROCEDURE.

3.7 ERECT SEGMENT PAIR P1-13 FOLLOWING STEP 3.3 PROCEDURE. NOTE THAT THE FINAL SEGMENT PAIR P1-13 DOES NOT REQUIRE PERMANENT CANTILEVER TENDONS AND IS HELD IN PLACE BY TEMPORARY POST-TENSIONING BARS UNTIL CLOSURE IS MADE AT BOTH ENDS.

NOTE:

FOR SCHEMATIC SECTION AT TEMPORARY SUPPORT SEE ERECTION SCHEMATIC SHEET 3, FIGURE ES-3.

REFER TO FIGURE 12 FOR SITE VICINITY PLAN.

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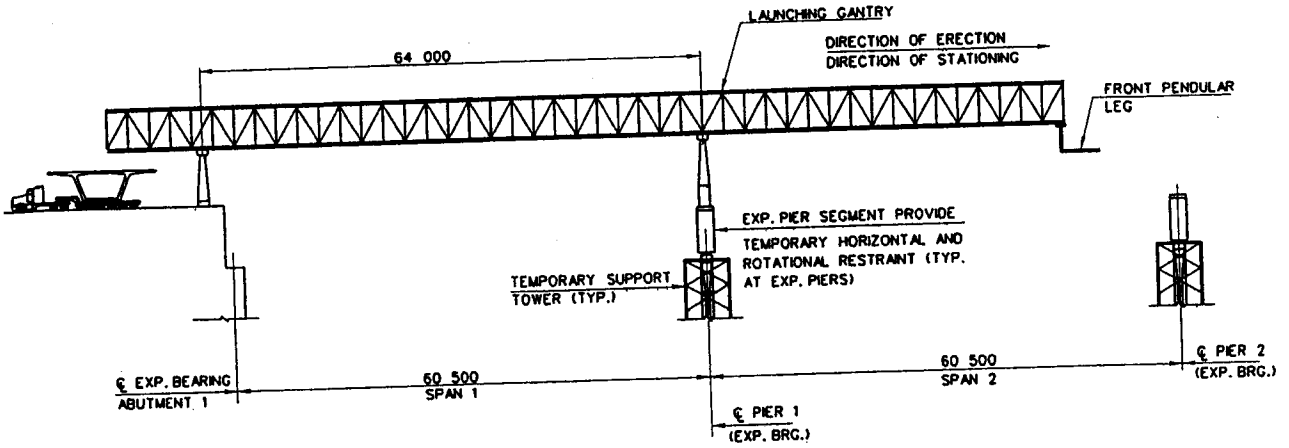
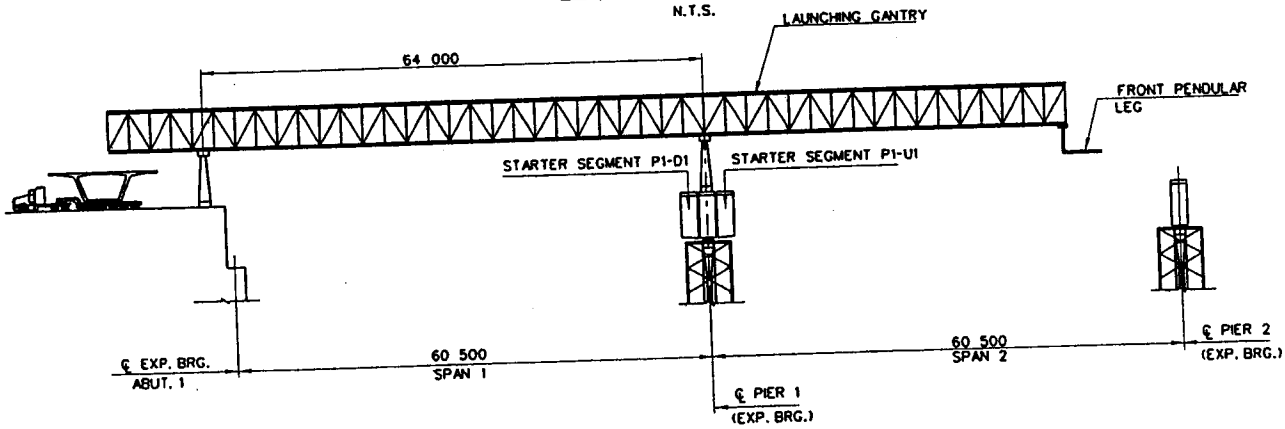
PROJECT NO. 138-221

DATE: 11/11/05 | ERECTION SCHEMATIC SHEET 2 | FIG. ES-2



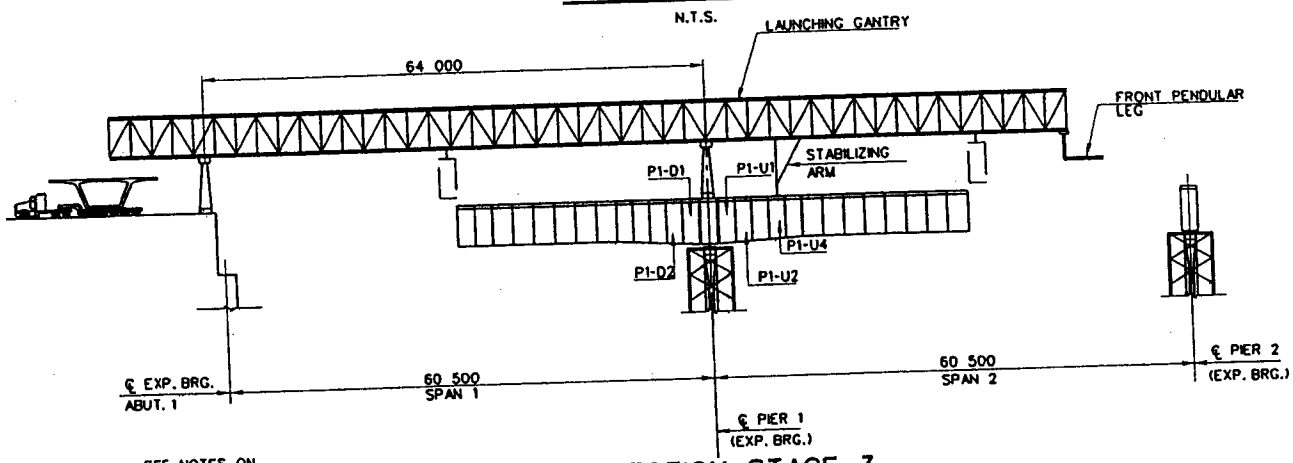
ERECTION STAGE 1

N.T.S.



ERECTION STAGE 2

N.T.S.



SEE NOTES ON ERECTION SCHEMATIC SHEET 2, FIG. ES-2

ERECTION STAGE 3

N.T.S.

GENERAL NOTES:

1. ALL DIMENSIONS ON THESE ERECTION SCHEMATIC SHEETS (FIGURES ES-1 THROUGH ES-12) ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
2. FIGURES ES-1 THROUGH ES-12 PRESENT ERECTION SCHEME FOR THE PROPOSED MOSES WHEELER BRIDGE (BRIDGE NO. 00135) SUPERSTRUCTURE. THIS CONSTRUCTION OCCURS AFTER THE BRIDGE PIERS & ABUTMENTS HAVE BEEN COMPLETED.
3. REFER TO FIGURE 33 AND 34 FOR SEQUENCE OF CONSTRUCTION OF THE NORTH, SOUTH AND MIDDLE GIRDERS OF THE BRIDGE.

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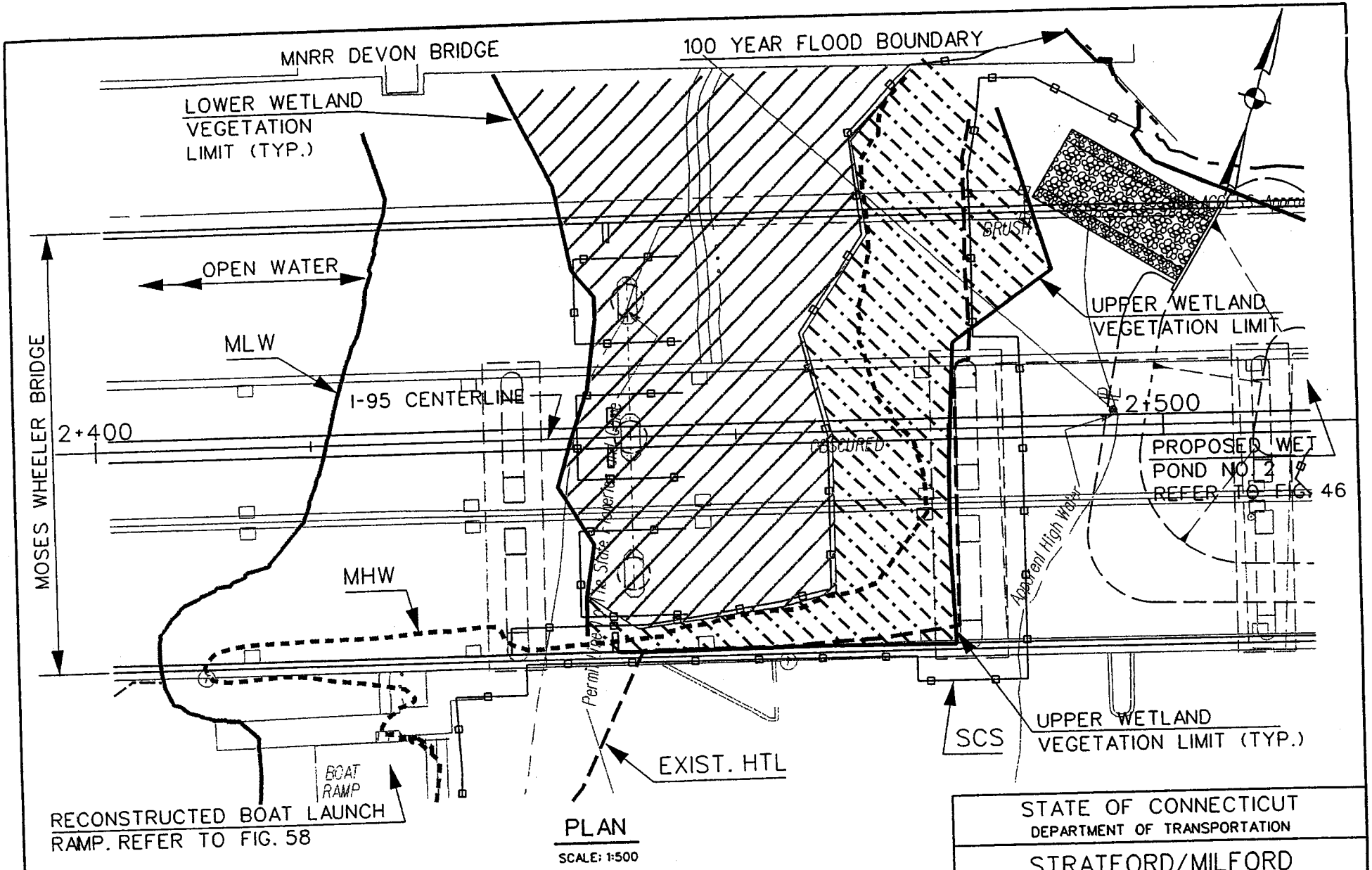
DATE: 11/11/05	ERECTION SCHEMATIC SHEET 1	FIG. ES-1



PLAN

SCALE: 1:500

LEGEND

PHRAGMITES AUSTRALIS (EXIST.)

SPARTINA ALTERNIFLORA (EXIST.)

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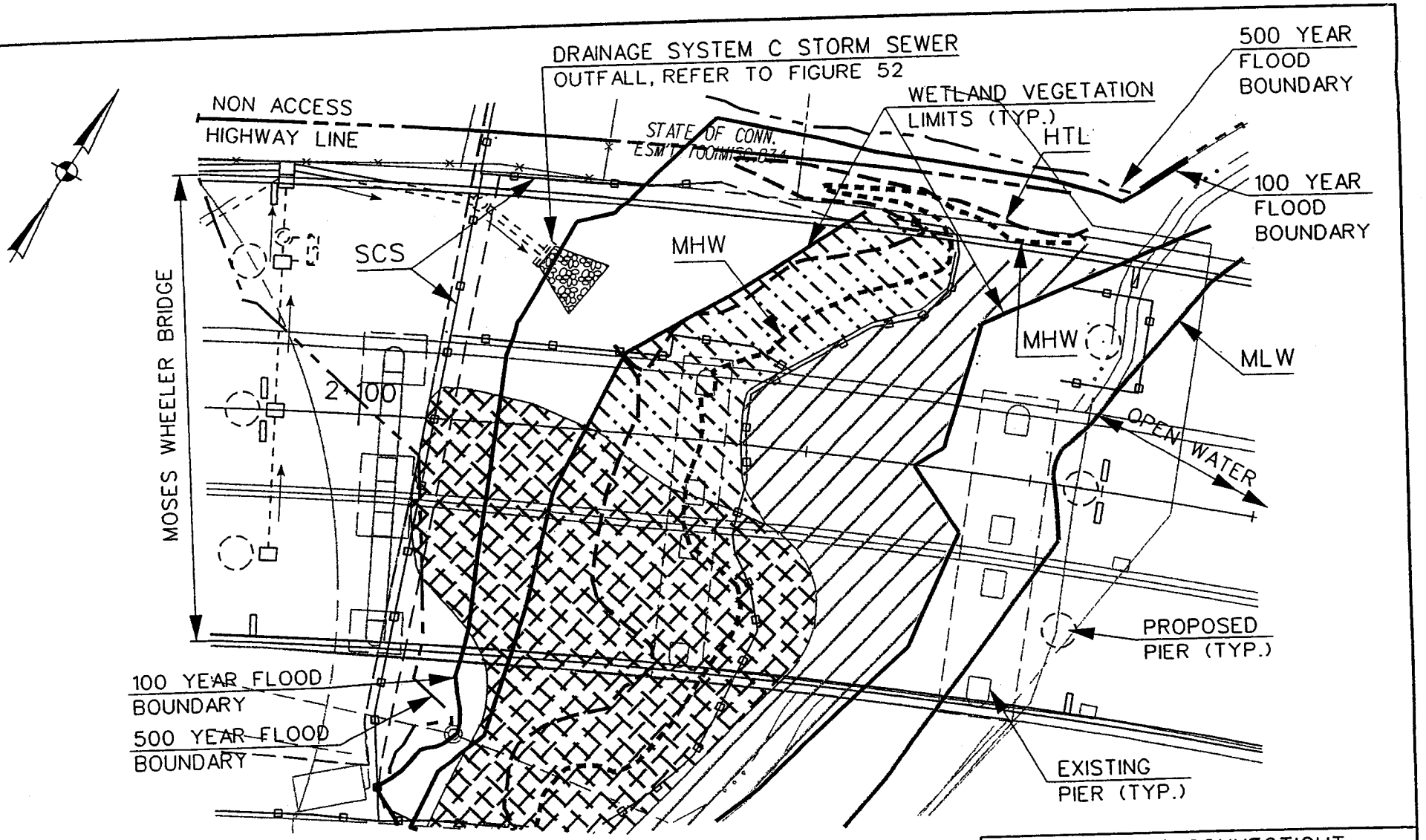
DATE: 11/22/06	VEGETATION SKETCH WETLAND AREA 2	FIG. VS-2



PLAN
SCALE 1:500

LEGEND

- DISTURBED VEGETATION
- PHRAGMITES AUSTRALIS
- SPARTINA ALTERNIFLORA

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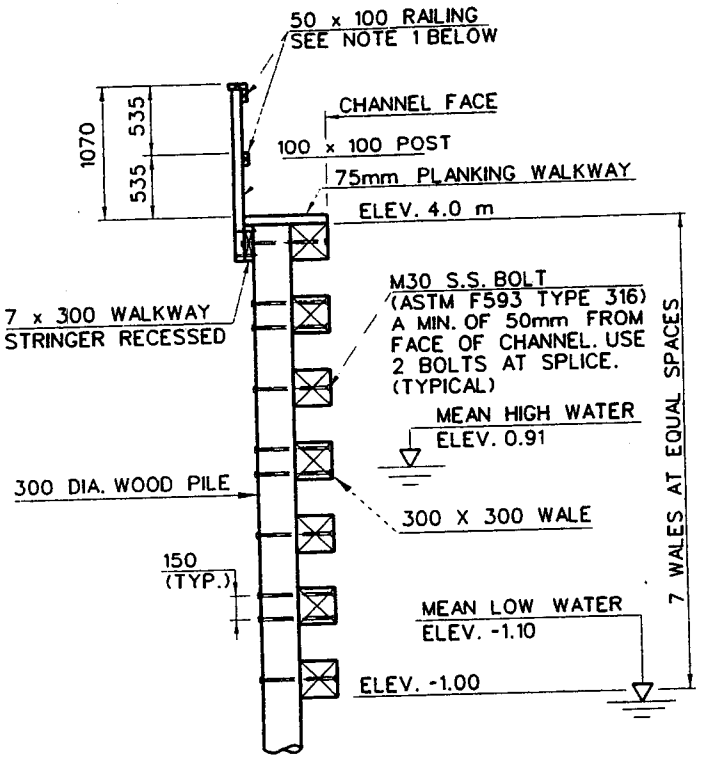
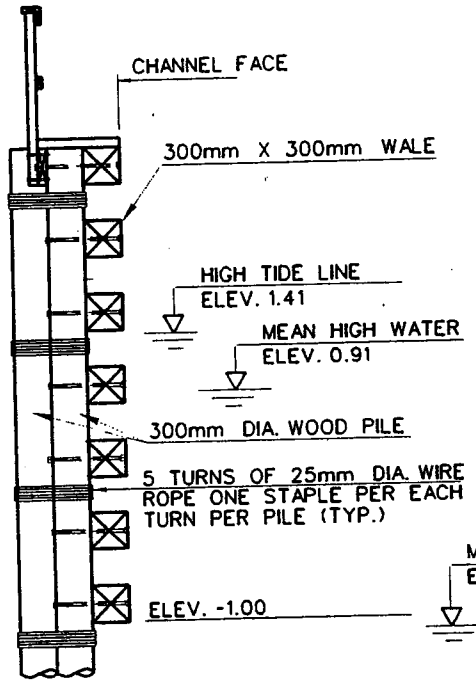
DATE: 11/22/06	VEGETATION SKETCH WETLAND AREA 1	FIG. VS-1



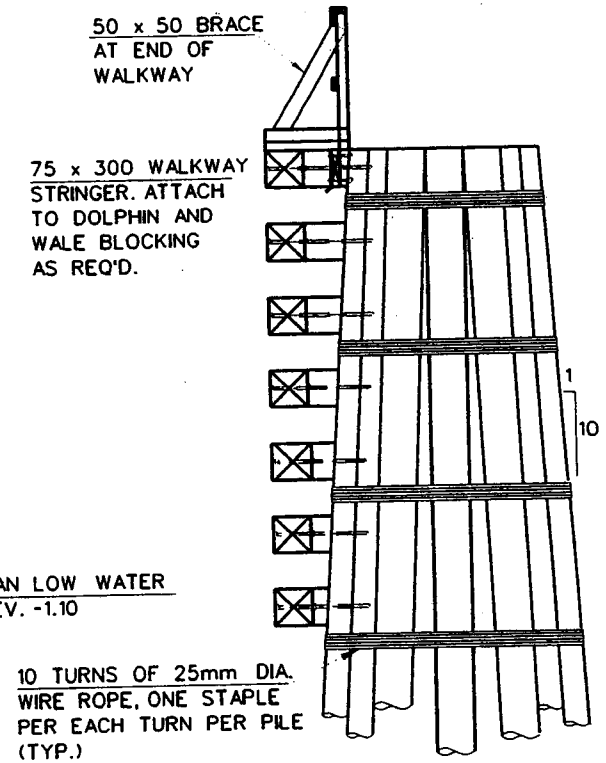
SECTION A-A

NOT TO SCALE



SECTION B-B

NOT TO SCALE



SECTION C-C

NOT TO SCALE

NOTES:

1. RAILING SHALL EXTEND FULL LENGTH OF FENDER SYSTEM.
2. PROVIDE RAILING POST AT EACH PILE OR AT A MAXIMUM SPACING OF 1.5m.
3. BOLTS ON THE FACE OF THE FENDER SYSTEM SHALL BE COUNTERSUNK.
4. ELEVATIONS ARE IN METERS AND ARE BASED ON NAVD 1988.
5. ALL DIMENSIONS ARE IN MILLIMETERS UNLES NOTED OTERWISE.

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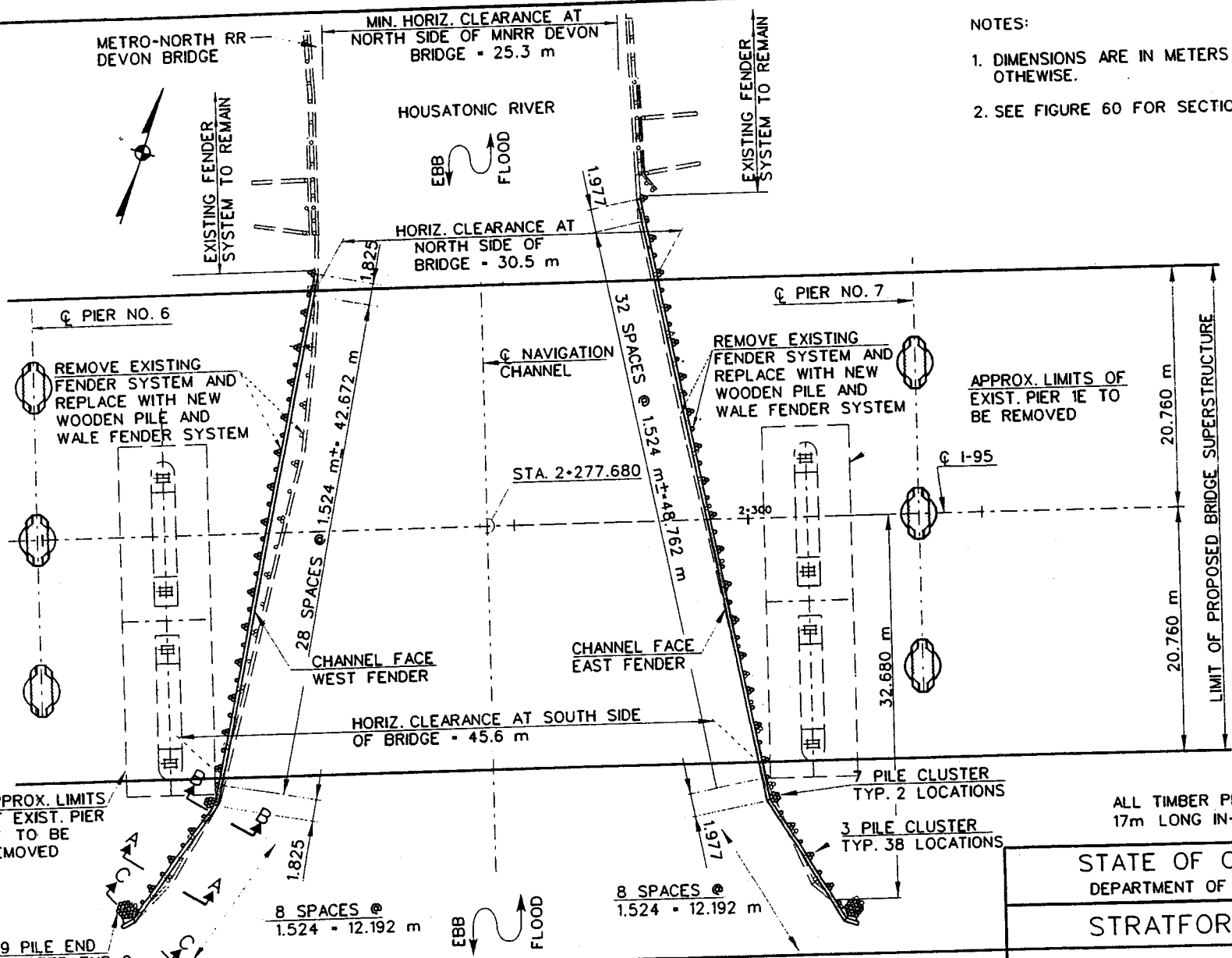
DATE: 11/22/06	PROPOSED FENDER SYSTEM - DETAILS	FIG. 60



NOTES:

1. DIMENSIONS ARE IN METERS UNLESS NOTES OTHEWISE.
2. SEE FIGURE 60 FOR SECTIONS A-A, B-B AND C-C.

ALL TIMBER PILES SHALL BE 17m LONG IN-PLACE

PLAN - PROPOSED FENDER SYSTEM

SCALE: 1:500

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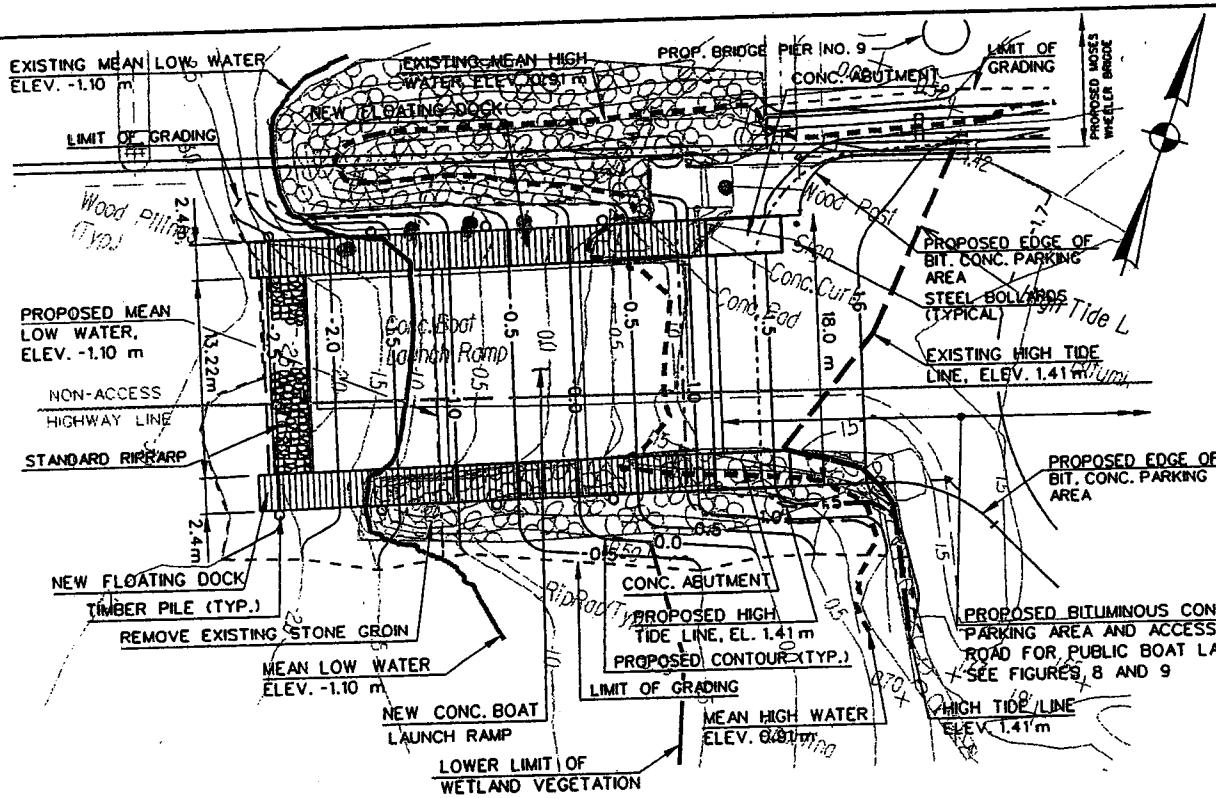
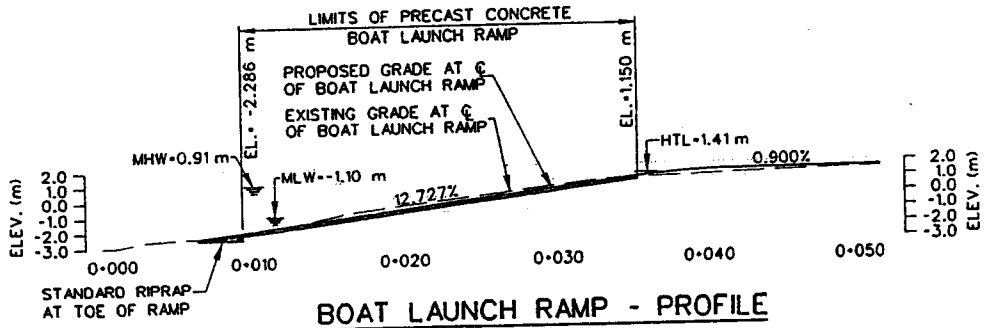
DATE: 11/22/06 | PROPOSED FENDER SYSTEM - PLAN | FIG. 59



BOAT LAUNCH RAMP - PLAN

SCALE 1:500



BOAT LAUNCH RAMP - PROFILE

SCALE 1:500

SUGGESTED RAMP CONSTRUCTION PROCEDURE

1. CONSTRUCT TURBIDITY CONTROL CURTAIN AROUND PERIMETER OF SITE.
2. REMOVE EXISTING CONCRETE RAMP, FLOATING DOCK AND STONE GROIN ON SOUTH SIDE OF EXISTING BOAT RAMP.
3. PREPARE SUBGRADE TO CORRECT LINE AND GRADE.
4. PLACE RIPRAP AT TOE OF RAMP.
5. PLACE SPECIAL RIPRAP IN WINDROWS PARALLEL WITH THE SHORE EVERY 3 000 mm FROM THE TOE TO THE TOP OF THE RAMP.
6. LAY STEEL RAILS (W150 X 30) ON TOP OF WINDROWS, PERPINDICULAR TO SHORE IN ACCORDANCE WITH PLAN. PUSH RAILS INTO WINDROWS TO CORRECT LINE AND GRADE.
7. USE A MECHANICALLY PULLED GRADE BAR SET ON THE RAILS TO LEVEL THE SPECIAL RIPRAP TO CORRECT GRADE.
8. SET INITIAL CONCRETE PANEL ON RAILS AT TOP OF RAMP AND PUSH WATERWARD UNTIL LOWER EDGE IS JUST UNDER THE WATER SURFACE. PUT IN PLACE A SECOND PANEL KEYED INTO THE PREVIOUS PANEL AND PUSH WATERWARD.
9. REPEAT ABOVE PROCEDURE CAREFULLY CHECKING PANEL ALIGNMENT AND ADJUSTING AS NECESSARY UNTIL ALL PANELS IN ONE COLUMN ARE PLACED.
10. CONSTRUCT INTERMEDIATE SUPPORT BLOCK.
11. REPEAT ABOVE PROCEDURE FOR ADDITIONAL PANEL COLUMNS.

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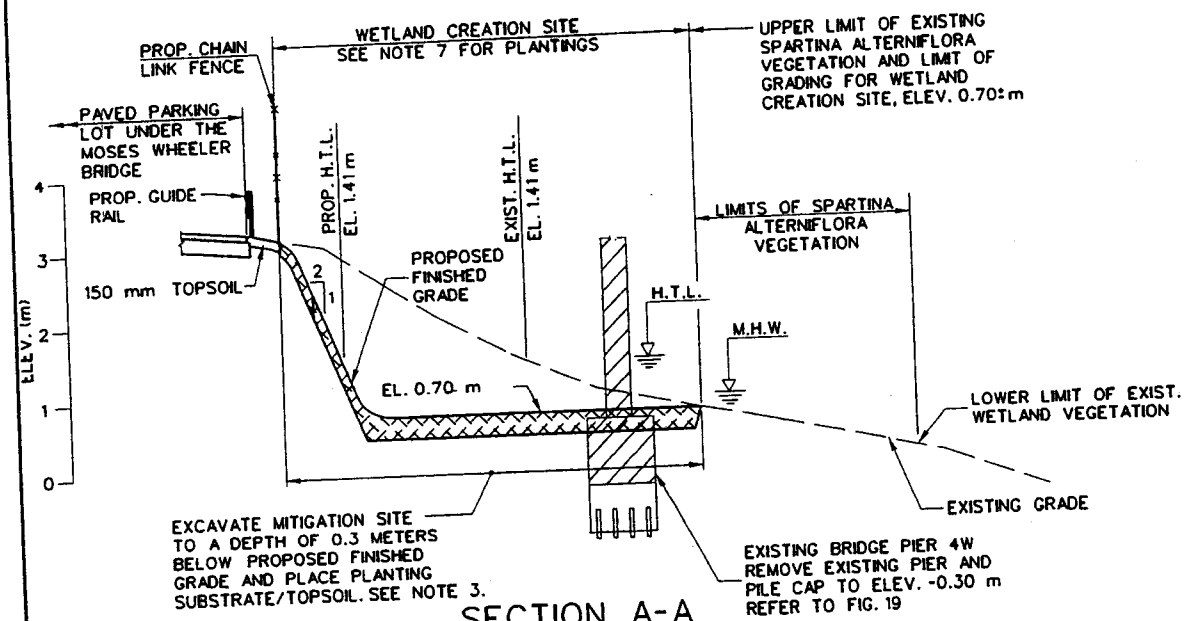
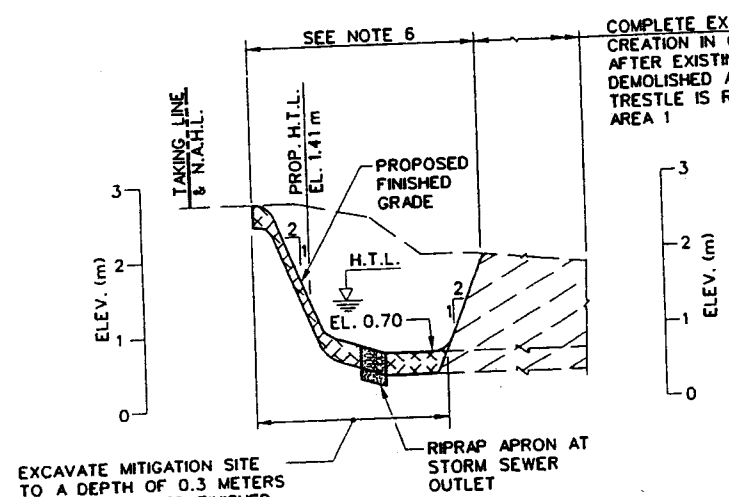
DATE: 11/22/06 | BOAT LAUNCH RAMP | FIG. 58



SECTION A-A

SCALE: HORIZ. 1:250
VERT. 1:50

REFER TO FIGURE 57A FOR LOCATION OF SECTION A-A
SECTION A-A IS CUT ALONG THE I-95 ℄



SECTION B-B

STA. 2+120 I-95 ℄
SCALE: HORIZ. 1:250
VERT. 1:50

NOTES:

1. A WETLAND SCIENTIST FROM THE CONNECTICUT DEPARTMENT OF TRANSPORTATION OFFICE OF ENVIRONMENTAL PLANNING WILL BE ON-SITE TO MONITOR AND DIRECT CONSTRUCTION OF THE WETLAND CREATION SITE.
2. THE TIDAL WETLAND MITIGATION WORK CONSISTS OF PREPARING APPROPRIATE SITE GRADES, PLACING APPROVED PLANTING SUBSTRATE/TOPSOIL, AND THE FURNISHING AND PLACING OF PLANTINGS.
3. PLANTING SUBSTRATE/TOPSOIL USED TO SURFACE THE WETLAND CREATION SITE SHALL BE A NATURAL OR MANMADE PLANTING SUBSTRATE WHICH SHALL CONSIST OF SOILS CONTAINING NO LESS THAN 75% SAND BY WEIGHT AND AN ORGANIC CONTENT NOT LESS THAN 10% AND NOT MORE THAN 15%.
4. EXISTING TOPSOIL STRIPPED FROM THE WETLAND MITIGATION AREA SHALL NOT BE REUSED BUT SHALL BE REMOVED FROM THE AREA AND PROPERLY DISPOSED OF AT AN UPLAND SITE.
5. EXISTING BRIDGE PIER 4W WILL BE REMOVED AT THE END OF CONSTRUCTION STAGE 3, AFTER THE EXISTING MOSES WHEELER BRIDGE IS FULLY REMOVED FROM SERVICE.
6. THE PORTION OF THE WETLAND CREATON SITE TO THE NORTH OF THE EXISTING MOSES WHEELER BRIDGE WILL BE CONSTRUCTED IN CONSTRUCTION STAGE 1, IN COORDINATION WITH THE CONSTRUCTION OF THE STRATFORD STORM SEWER OUTFALL (REFER TO FIGURES 52 AND 53). CREATION OF THE REMAINDER OF THIS WETLAND CREATION SITE WILL BE PERFORMED IN CONSTRUCTION STAGE 4, AFTER THE EXISTING MOSES WHEELER BRIDGE HAS BEEN REMOVED.
7. PLANTINGS IN THIS WETLAND CREATION SITE SHALL CONSIST OF THE FOLLOWING:
   - ESTABLISH SHORELINE GRASS ON THE EMBANKEMENT AREAS ABOVE THE PROPOSED HIGH TIDE LINE (ELEV. 1.41 m).
   - PLANT SHRUBS CONSISTING OF GROUNDED TREE, HIGH TIDE BUSH, SWEET GALE AND ROSE MALLOW ACCORDING TO THE PLANTING PLAN IN THE DESIGN DRAWINGS, ON THE EMBANKMENT OF THE WETLAND CREATION SITE ABOVE THE PROPOSED HIGH TIDE LINE.
   - PLANT PLUGS OF SALTMEADOW HAY (SPARTINA PATENS) AT A SPACING OF 600 mm (24") ON-CENTER ON THE EMBANKMENT OF THIS WETLAND CREATION SITE BETWEEN THE PROPOSED MEAN HIGH WATER LINE (ELEV. 0.91 m) AND THE PROPOSED HIGH TIDE LINE (ELEV. 1.41 m).
   - PLANT PLUGS FO SMOOTH CORDGRASS (SPARTINA ALTERNIFLORA) AT A SPACING OF 900 mm (36") ON-CENTER IN THE WETLAND CREATION SITE BETWEEN THE LOWER LIMIT OF GRADING FOR THIS WETLAND CREATION SITE AND THE PROPOSED HIGH TIDE LINE (ELEV. 1.41 m).

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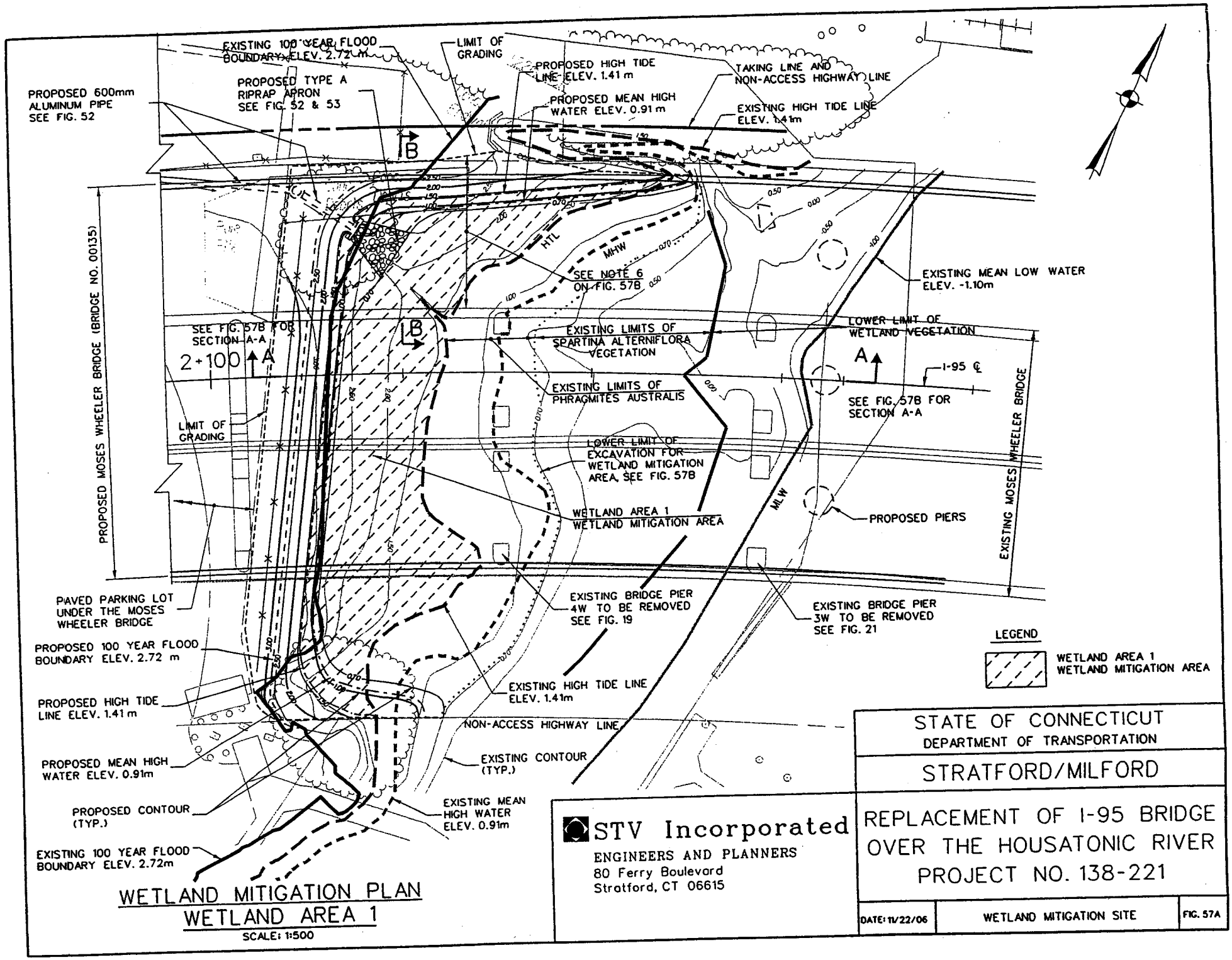
DATE: 11/22/06	WETLAND MITIGATION SECTION	FIG. 57B



WETLAND MITIGATION PLAN
WETLAND AREA 1

SCALE: 1:500

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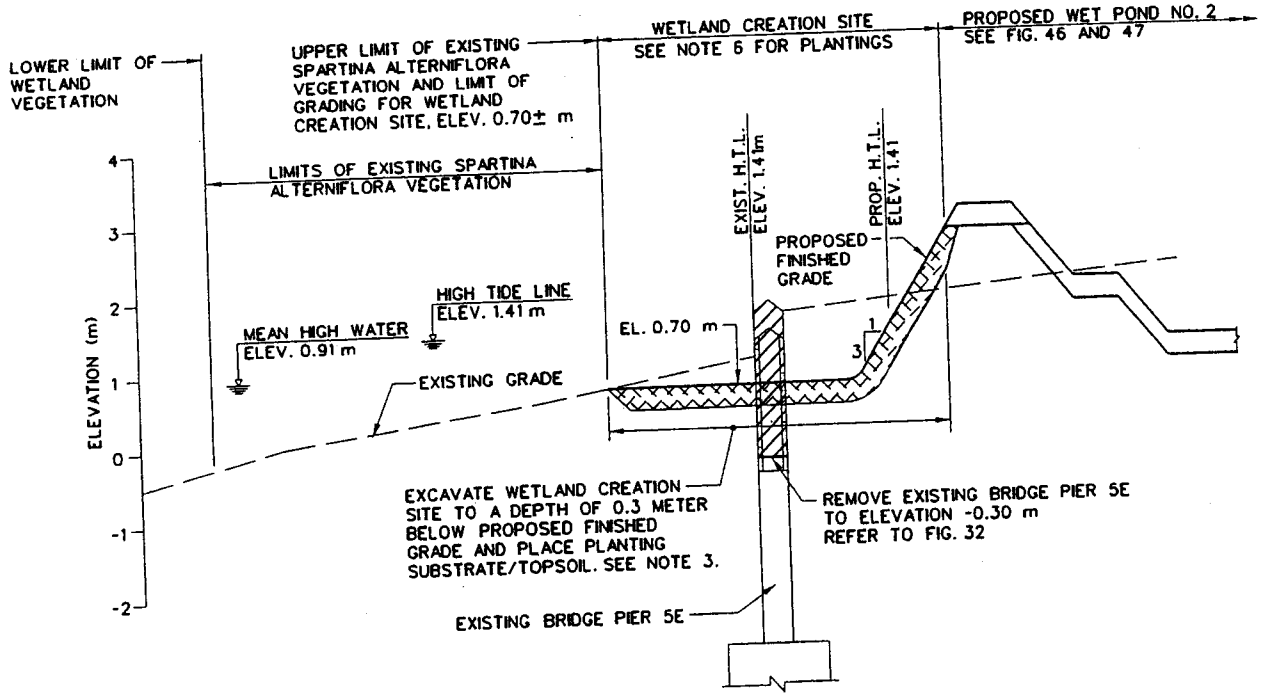
DATE: 11/22/06	WETLAND MITIGATION SITE	FIG. 57A



SECTION A-A

SCALE - HORIZ. 1:500
VERT. 1:100

REFER TO FIGURE 56 FOR LOCATION OF SECTION A-A
SECTION A-A IS CUT ALONG THE I-95 ℄

NOTES:

1. A WETLAND SCIENTIST FROM THE CONNECTICUT DEPARTMENT OF TRANSPORTATION OFFICE OF ENVIRONMENTAL PLANNING WILL BE ON-SITE TO MONITOR AND DIRECT CONSTRUCTION OF THE WETLAND CREATION SITE.
2. THE TIDAL WETLAND MITIGATION WORK CONSISTS OF PREPARING APPROPRIATE SITE GRADES, PLACING APPROVED PLANTING SUBSTRATE/TOPSOIL, AND THE FURNISHING AND PLACING OF PLANTINGS.
3. PLANTING SUBSTRATE/TOPSOIL USED TO SURFACE THE WETLAND CREATION SITE SHALL BE A NATURAL OR MANMADE PLANTING SUBSTRATE WHICH SHALL CONSIST OF SOILS CONTAINING NO LESS THAN 75% SAND BY WEIGHT AND AN ORGANIC CONTENT NOT LESS THAN 10% AND NOT MORE THAN 15%.
4. EXISTING TOPSOIL STRIPPED FROM THE WETLAND CREATION SITE SHALL NOT BE REUSED BUT SHALL BE REMOVED FROM THE AREA AND PROPERLY DISPOSED OF AT AN UPLAND SITE.
5. EXISTING BRIDGE PIER 5E WILL BE REMOVED AT THE END OF CONSTRUCTION STAGE 3, AFTER THE EXISTING MOSES WHEELER BRIDGE IS FULLY OUT OF SERVICE. CONSTRUCTION OF PROPOSED WET POND NO. 2 AND THIS WETLAND CREATION SITE WILL BE CONSTRUCTED IN CONSTRUCTION STAGE 4.
6. PLANTINGS IN THE WETLAND CREATION SITE SHALL CONSIST OF THE FOLLOWING:
   - ESTABLISH SHORELINE GRASS ON THE EMBANKMENT AREAS ABOVE THE PROPOSED HIGH TIDE LINE.
   - PLANT SHRUBS, CONSISTING OF GROUNDED TREE, HIGH TIDE BUSH, SWEET GALE AND ROSE MALLOW ACCORDING TO THE PLANTING PLAN IN THE DESIGN DRAWINGS, ON THE EMBANKMENT OF THE WETLAND CREATION SITE ABOVE THE PROPOSED HIGH TIDE LINE (ELEV. 1.41 m).
   - PLANT PLUGS OF SALTMEADOW HAY (SPARTINA PATENS) AT 600 mm (24") ON CENTER ON THE EMBANKMENT OF THE WETLAND CREATION SITE BETWEEN THE PROPOSED MEAN HIGH WATER (ELEV. 0.91 m) AND THE PROPOSED HIGH TIDE LINE (ELEV. 1.41 m).
   - PLANT PLUGS OF SMOOTH CORDGRASS (SPARTINA ALTERNIFLORA) AT 900 mm (36") ON CENTER IN THE THE WETLAND CREATION SITE AREA BETWEEN THE LOWER LIMIT OF GRADING AND PROPOSED HIGH TIDE ELEVATION (ELEV. 0.91 m).

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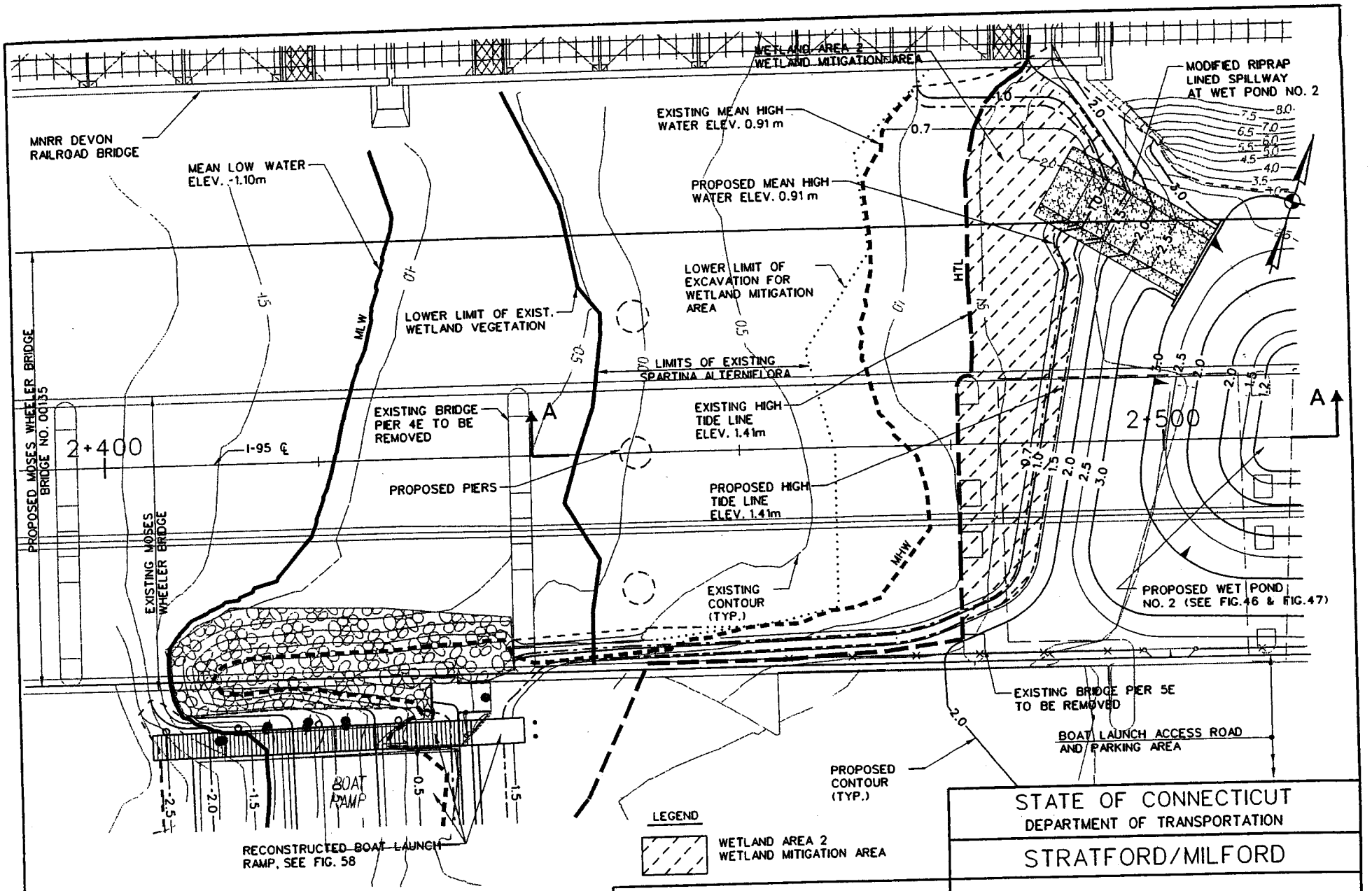
DATE: 11/22/06	WETLAND MITIGATION SECTION	FIG. 57



WETLAND MITIGATION PLAN
WETLAND AREA 2

SCALE- 1:500

REFER TO FIG. 57 FOR SECTION A-A

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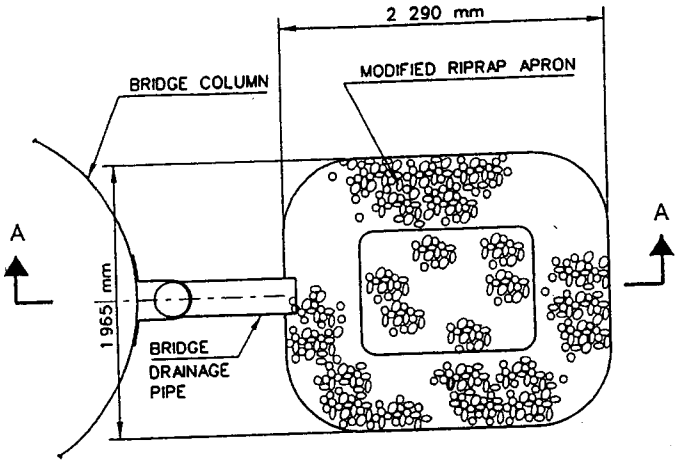
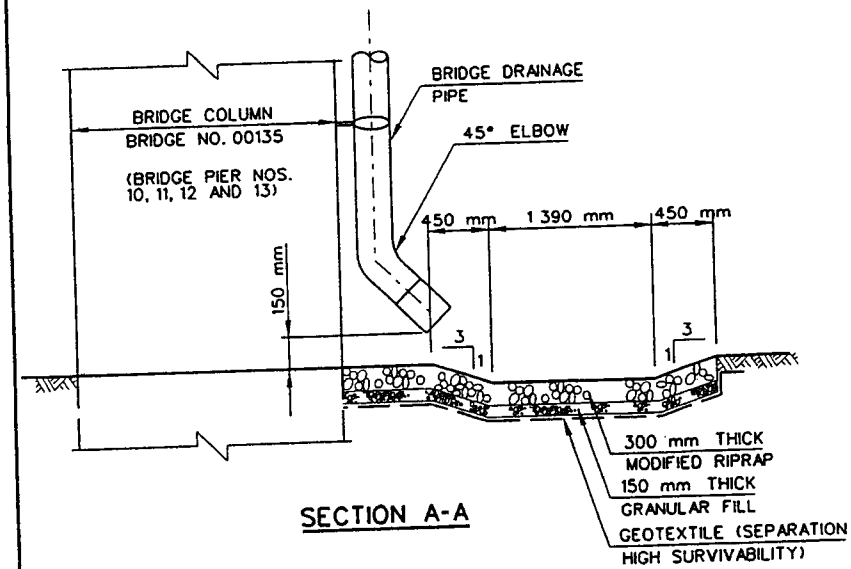
DATE: 11/22/06	WETLAND MITIGATION SITE	FIG. 56



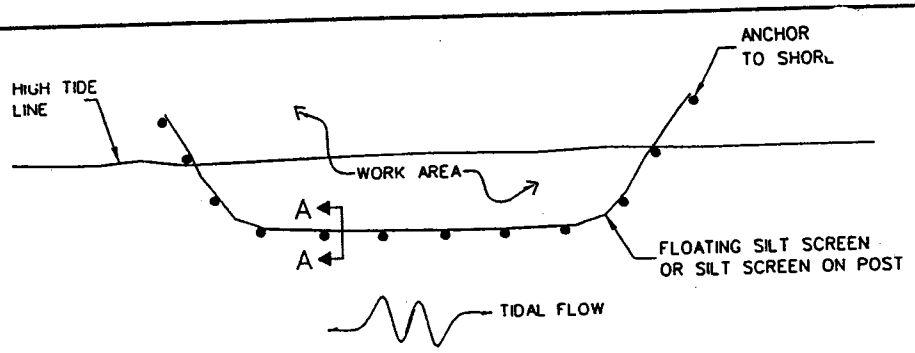
PLAN



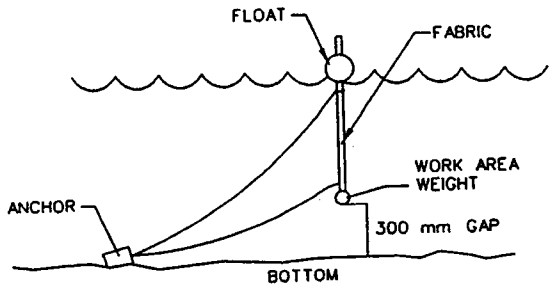
SECTION A-A

OPEN ENDED SCUPPER OUTLET WITH RIPRAP APRON

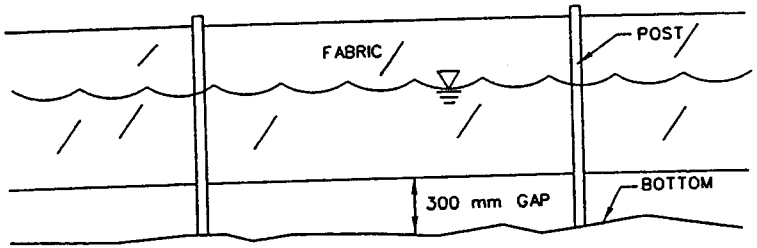
NOT TO SCALE



PLAN - SILT SCREEN



SECTION A-A - (FLOATING SILT SCREEN)



ELEVATION - (SILT SCREEN ON POSTS)

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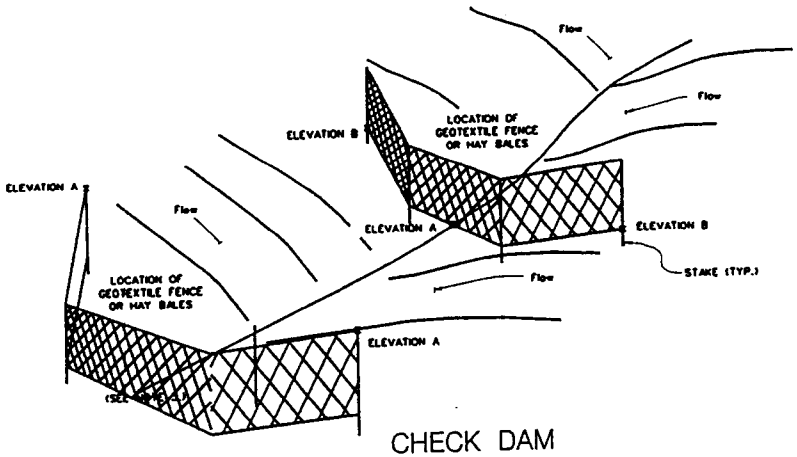
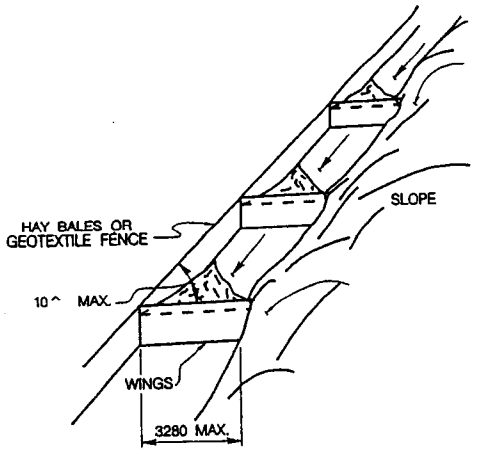
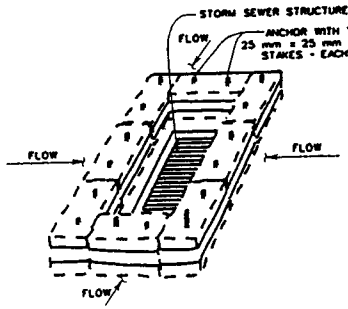
DATE: 11/11/05	EROSION CONTROL DETAILS	FIG. 55



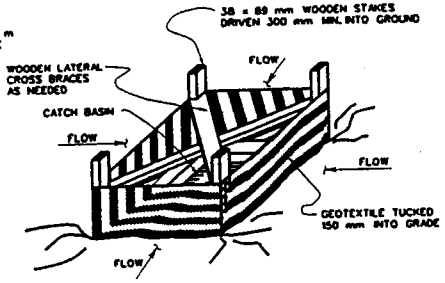
CHECK DAM



TREATMENT AT TOE OF SLOPE

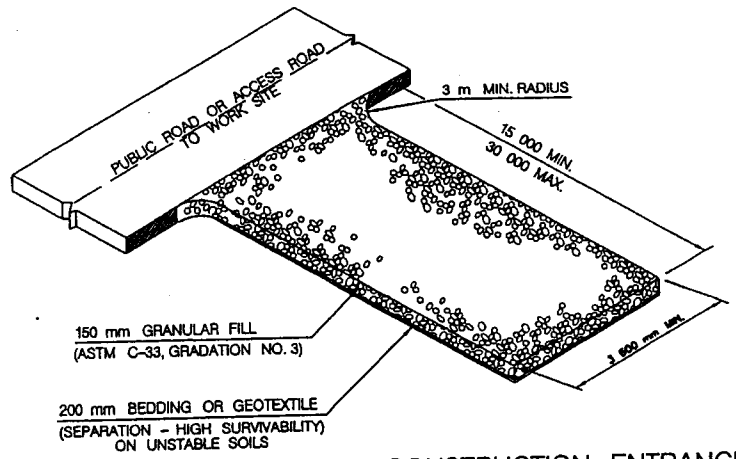


HAY BALE
AT CATCH BASIN



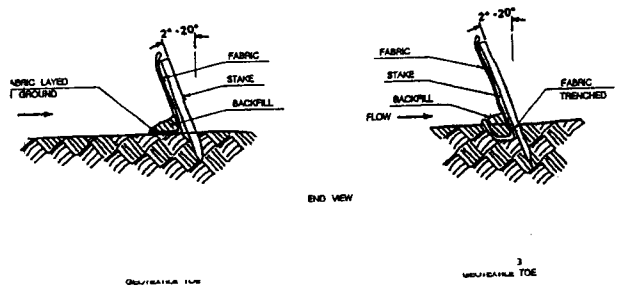
GEOTEXTILE FENCE
AT CATCH BASIN

TREATMENT FOR A
CATCH BASIN IN A DEPRESSION



TYPICAL CONSTRUCTION ENTRANCE

Revised: 2/19/03



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REPLACEMENT OF I-95 BRIDGE
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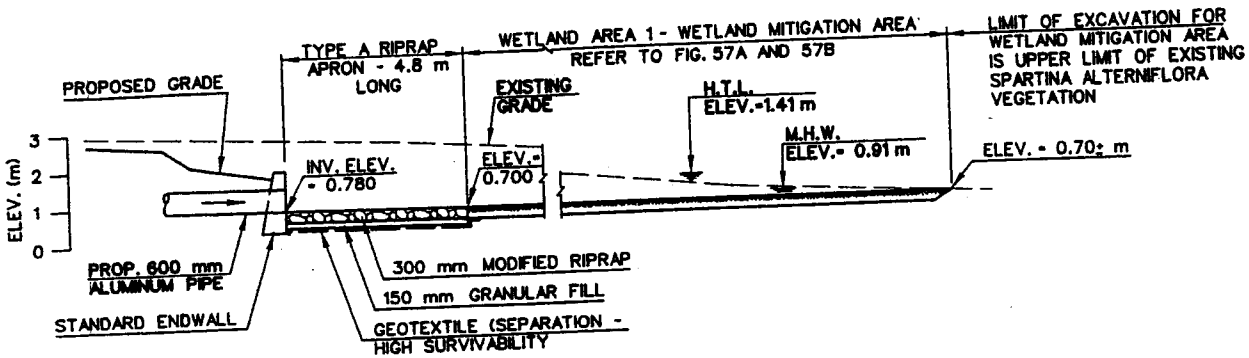
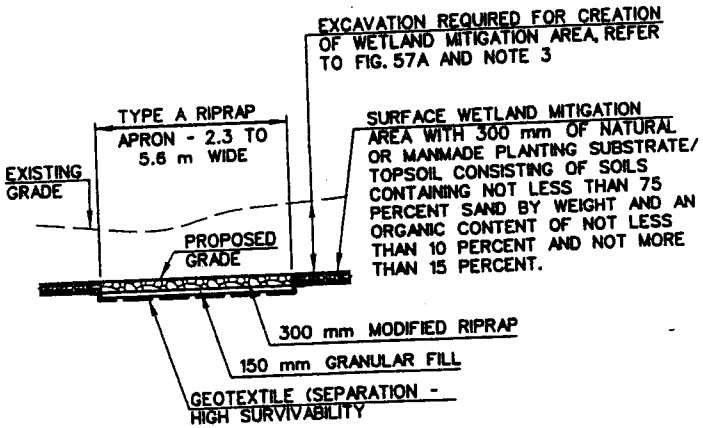
PROJECT NO. 138-221

DATE: 11/11/05	SEDIMENTATION AND EROSION CONTROL MEASURES	FIG. 54



SECTION C-C

SCALE: 1:200



SECTION D-D

SCALE: 1:200

NOTES:

1. REFER TO FIGURE 52 FOR THE LOCATION OF SECTIONS C-C AND D-D.
2. THIS PROPOSED 600 mm STORM SEWER SYSTEM HANDLES ONLY RUNOFF FROM THE NEW MOSES WHEELER BRIDGE DECK, BETWEEN PIERS 1 AND 5. FOR LAYOUT OF STORM SEWER SYSTEM REFER TO FIGURES 39 AND 40.
3. THIS STORM SEWER OUTFALL WILL BE INSTALLED IN CONSTRUCTION STAGE 1 TO ACCEPT RUNOFF FROM THE BRIDGE DECK ON THE NORTH GIRDER OF THE NEW MOSES WHEELER BRIDGE. CREATION OF THE WETLAND MITIGATION AREA TO THE NORTH OF THE EXISTING MOSES WHEELER BRIDGE SHALL BE PERFORMED PRIOR TO THE CONSTRUCTION OF THIS STORM SEWER OUTFALL.
4. CREATION OF THE PORTION OF THE WETLAND MITIGATION AREA UNDER AND TO THE SOUTH OF THE EXISTING MOSES WHEELER BRIDGE WILL BE PERFORMED AT THE END OF CONSTRUCTION STAGE 4 AFTER THE EXISTING BRIDGE HAS BEEN DEMOLISHED.
5. REFER TO FIGURES 57A AND 57B FOR PLANS OF THE WETLAND MITIGATION AREA.

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80 Ferry Boulevard
Stratford, CT 06615

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

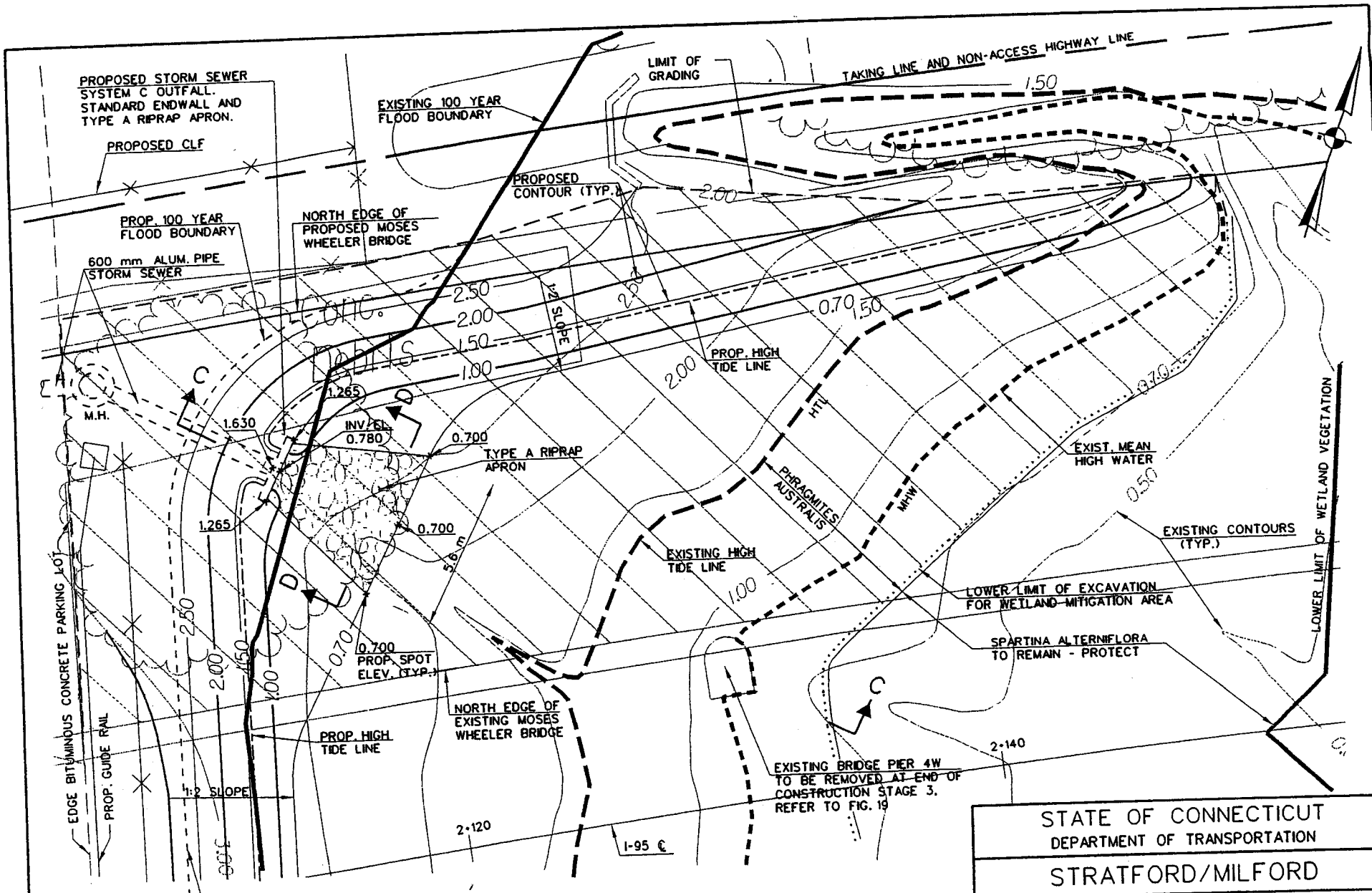
STRATFORD/MILFORD

REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER PROJECT NO. 138-221

DATE: 11/22/06

DRAINAGE SYSTEM C
PROPOSED STORM SEWER OUTFALL

FIG. 53



PLAN
STRATFORD STORM SEWER OUTFALL

SCALE: 1:200

NOTE: REFER TO FIG. 53 FOR SECTION C-C AND SECTION D-D AND NOTES.

LEGEND

INDICATES PORTION OF WETLAND MITIGATION AREA TO BE GRADED AND PLANTED IN CONSTRUCTION STAGE 1 PRIOR TO THE CONSTRUCTION OF THIS STORM SEWER OUTFALL

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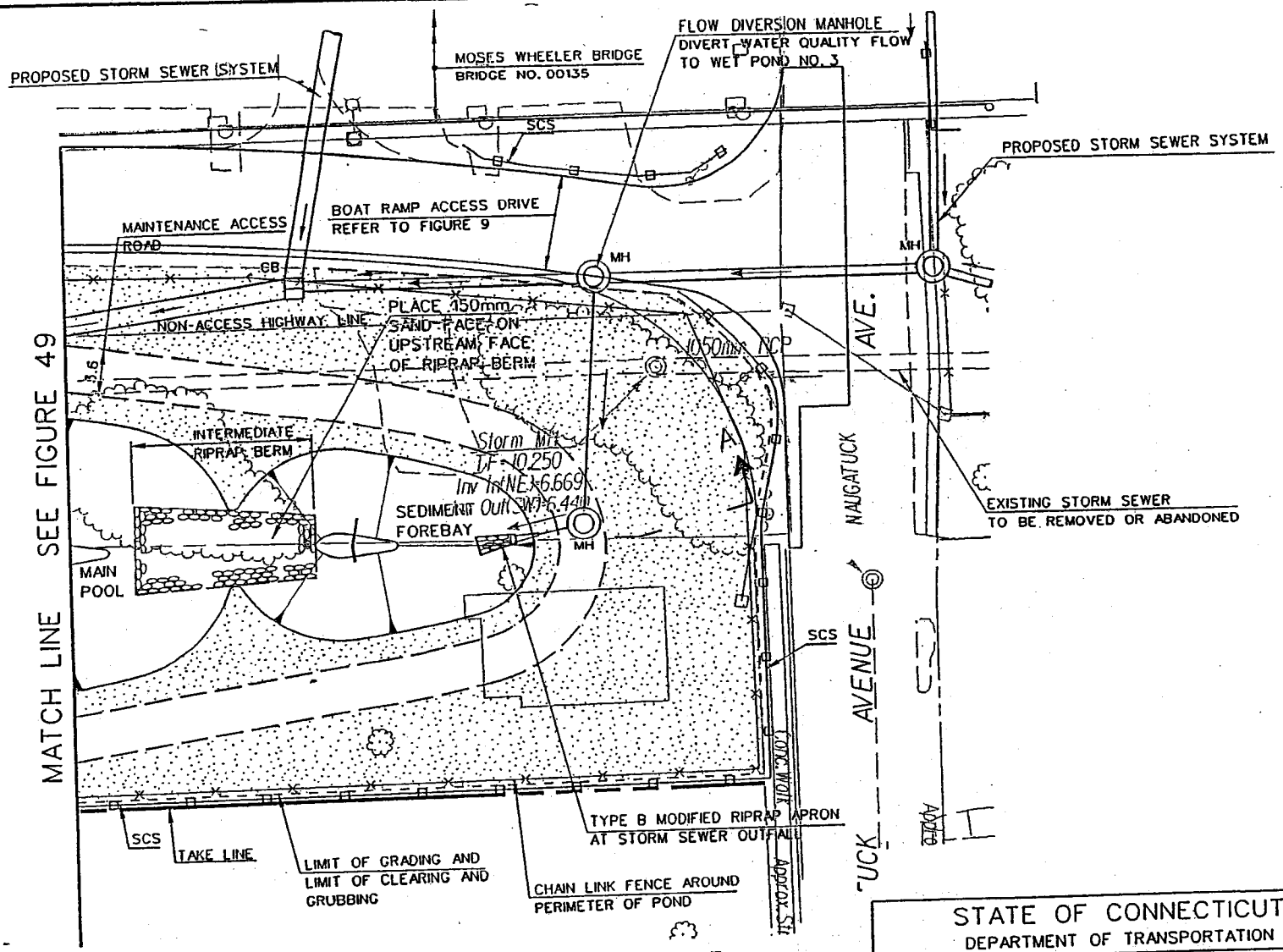
STRATFORD/MILFORD

REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER
PROJECT NO. 138-221

DATE: 11/22/06	DRAINAGE SYSTEM C PROPOSED STORM SEWER OUTFALL	FIG. 52



PLAN - WET POND NO. 3

SCALE: 1:50

NOTES:
1. THE FOREBAY FACE OF THE INTERMEDIATE RIPRAP BERM WILL HAVE A 150 mm SAND FACE PLACED OVER GEOTEXTILE FABRIC.
2. FOR SECTION A-A SEE FIGURE 51.

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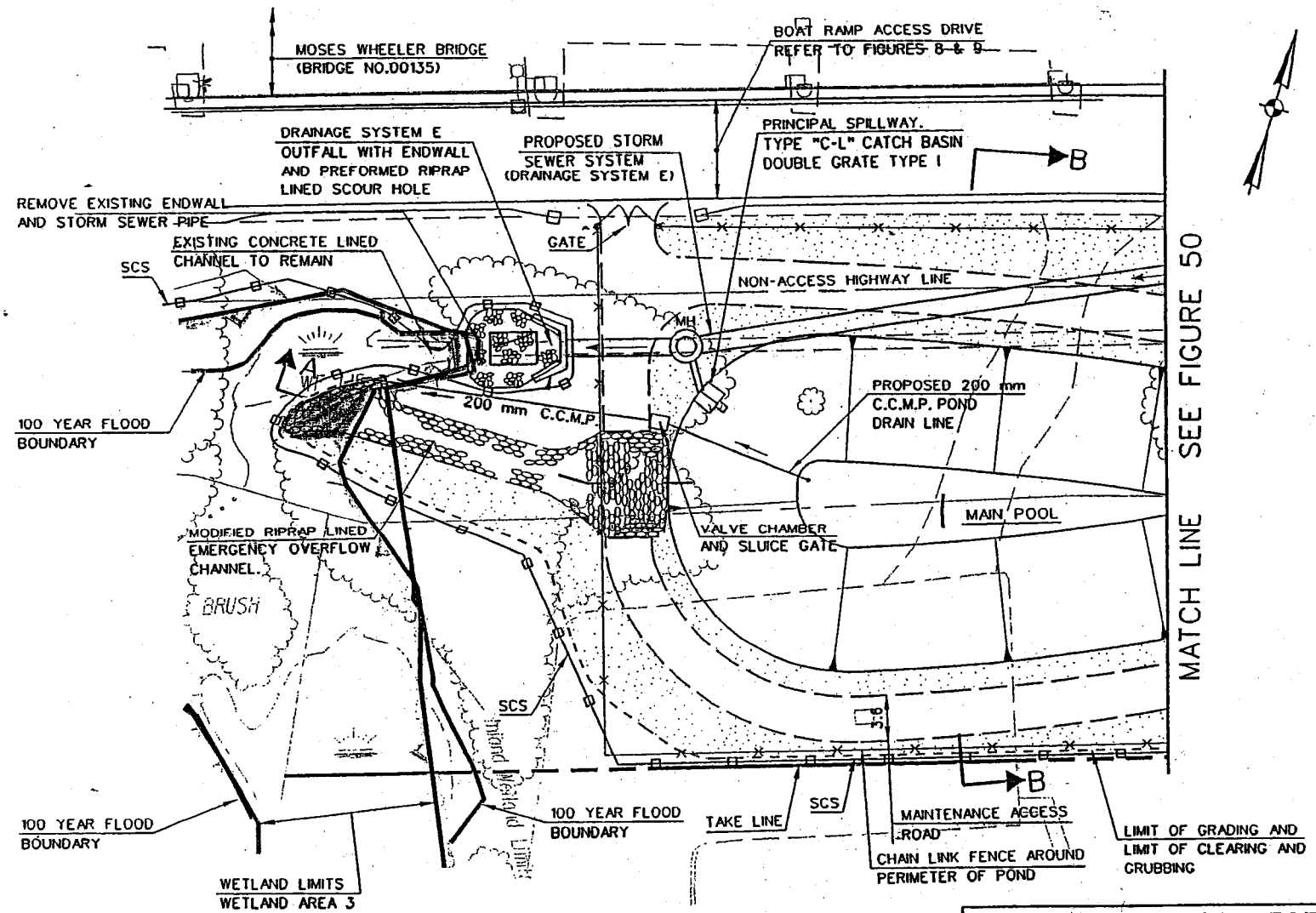
REPLACEMENT OF I-95 BRIDGE
OVER THE HOUSATONIC RIVER
PROJECT NO. 138-221

DATE: 11/11/05	WET POND NO. 3	FIG. 50



PLAN - WET POND NO. 3

SCALE: 1:50

NOTES:
1. REFER TO FIG. VS-3 FOR THE VEGETATION SKETCH.
2. FOR SECTIONS A-A AND B-B SEE FIGURE 51.

LEGEND
- 100 YEAR FLOOD BOUNDARY
- WETLAND VEGETATION LIMIT

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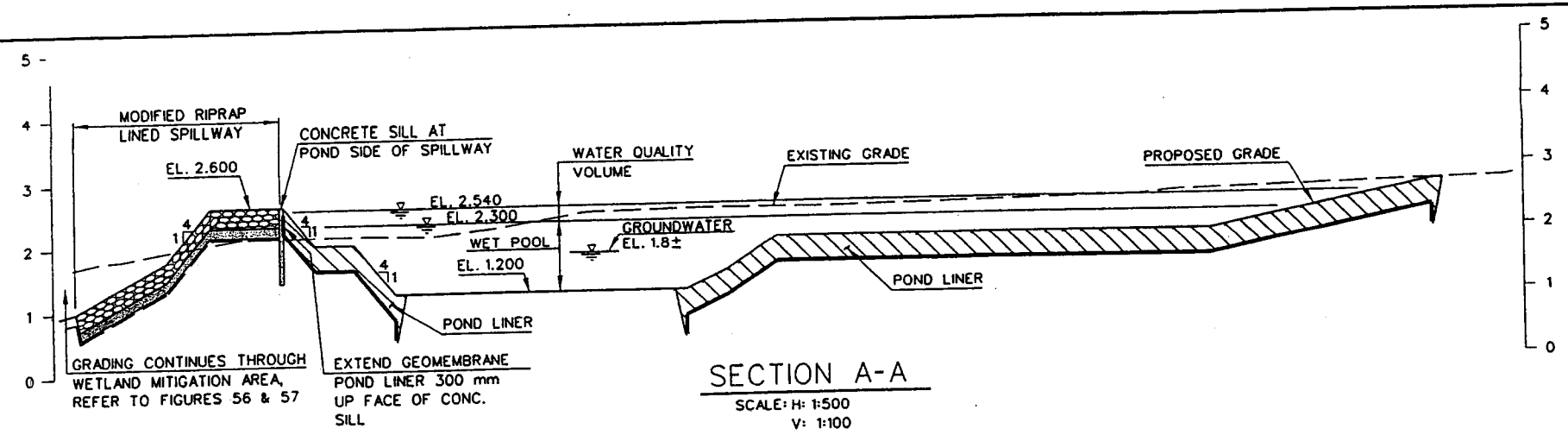
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

STRATFORD/MILFORD

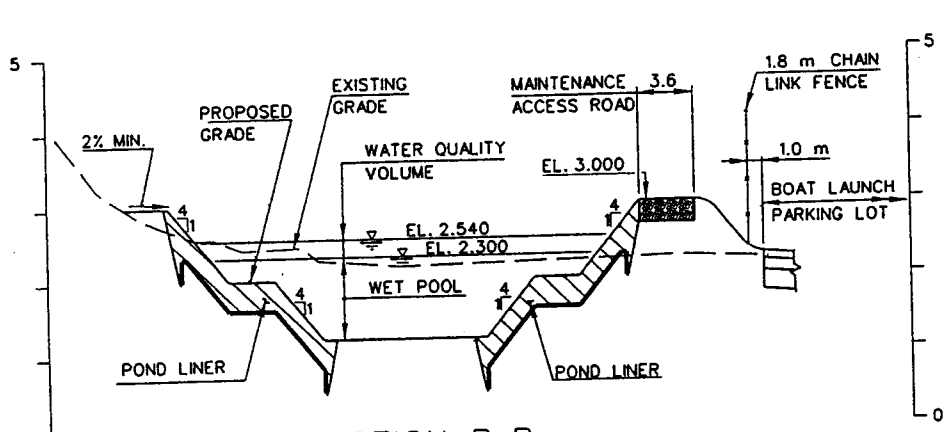
REPLACEMENT OF I-95 BRIDGE
OVER THE HOUSATONIC RIVER
PROJECT NO. 138-221

DATE: 11/11/05	WET POND NO. 3	FIG. 49



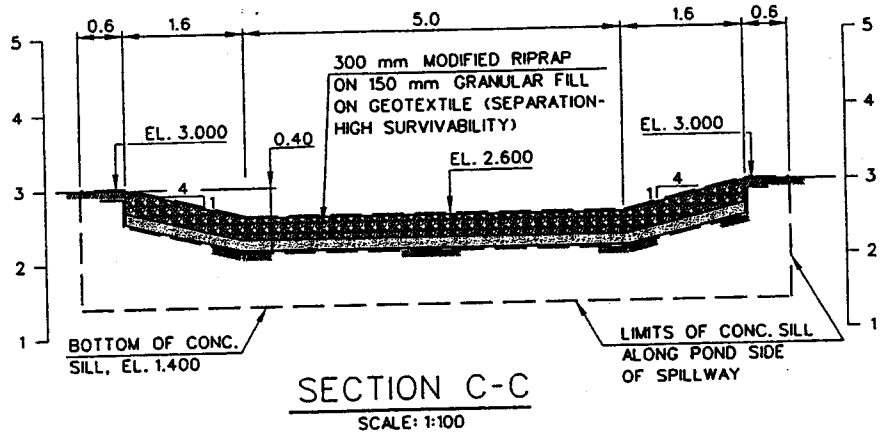
SECTION A-A

SCALE: H: 1:500
V: 1:100



SECTION B-B

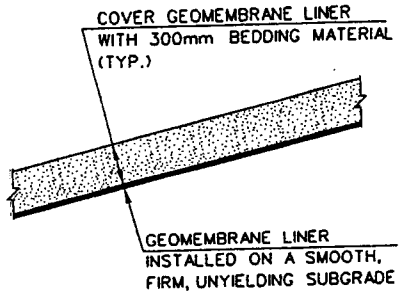
SCALE: H: 1:500
V: 1:100



SECTION C-C

SCALE: 1:100

SECTION AND DETAILS - WET POND NO. 2



EMBED GEOMEMBRANE LINER IN ANCHOR TRENCHES AT UPPER AND LOWER LIMITS OF THE POND LINER.

TYPICAL SECTION POND LINER

N.T.S.

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Stratford, CT 06615

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

STRATFORD/MILFORD

REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER
PROJECT NO. 138-221

DATE: 11/11/05	WET POND NO. 2 SECTIONS AND DETAILS	FIG. 48

Replacement of the Moses Wheeler Bridge over the Housatonic River
State Project No. 138-221
Stratford/Milford, CT

List of Temporary Impacts to Navigation Channel

Construction Stage	Construction Activity	Navigation Channel Closure Type & Period
1	Install new C&S cables on MNRR Devon Bridge - lifting cables over the navigation channel	Full closure 2 days
1	Assemble segmental precast concrete girders for North girder over the navigation channel	Full closure 5 days
2	Assemble segmental precast concrete girders for South girder over the navigation channel	Full closure 5 days
2	Install temporary debris shield under existing N.B. superstructure over the navigation channel	Partial closure 6 days
2	Remove floor beams and purlins/brace main girders (N.B.) over the navigation channel	Partial closure 8 days
2	Remove temporary debris shield under N.B. superstructure over the navigation channel	Partial closure 4 days
2	Remove main girders from N.B. superstructure over the navigation channel	Full closure 2 days
3	Assemble segmental precast concrete girders for Middle girder over the navigation channel	Full closure 5 days
3	Construct new fender system after demolition of Piers 1E and 1W	Partial closure 20 days
3	Install temporary debris shield under existing S.B. superstructure over the navigation channel	Partial closure 6 days
3	Remove floor beams/purlins and brace main girders (S.B.) over the navigation channel	Partial closure 8 days
3	Remove temporary debris shield under N.B. superstructure over the navigation channel	Partial closure 4 days
3	Remove main girders from S.B. superstructure over the navigation channel	Full closure 2 days
3	Remove existing timber fender system along the navigation channel adjacent to Piers 1W & 1E	Partial closure 10 days
3	Construct temporary fender system adjacent to temporary trestles	Partial closure 10 days

Note: A partial channel closure will maintain 12.1-meters (40-feet) of navigation channel open to boat traffic during the construction activity.

DATED 1-2-07

FIGURE CHN-1

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

August 20, 2008

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Edgar Hurle
CT DOT
P.O. Box 317546
Newington, CT 06131-7546

SUBJECT: PERMIT NO. 200600415-KZ
CT DOT
Milford/Stratford

Dear Mr. Hurle:

Enclosed is the signed permit which constitutes the approval of your application to conduct regulated activities. Your attention is directed to the conditions of the enclosed permit. Construction or work must conform to that which is authorized.

If you have not already done so, you should contact your local Planning and Zoning Office to determine local permit requirements on your project, if any. Also, your activity may be eligible for General Permit authorization from the U.S. Army Corps of Engineers. The State of Connecticut forwarded a copy of its tentative determination for this activity to the Corps for its determination of General Permit eligibility. You do not need to apply directly to the Corps unless they notify you. If General Permit eligibility has already been determined, an authorization letter will be attached to this permit. Otherwise, authorization will be mailed separately. For more information regarding this new federal process, you may write to the Corps New England Division, Regulatory Branch, 696 Virginia Road, Concord, Massachusetts 01742-2751; or, call (800) 343-4789.

If you have any questions concerning your permit, please contact staff of the Permit section at (860)424-3626.

Sincerely,

Kevin Zawoy
Environmental Analyst
Office of Long Island Sound Programs

KZ/ko

Enc.

Sent Certified Mail, Return Receipt Requested to: Commissioner of Transportation; Adjacent Property Owners; All Parties; the Mayor, First Selectman or Town Manager; Shellfish Commission; the Planning and Zoning Commissions; and the Harbor Management Commission.

Copies Furnished to:

STV Incorporated
Conservation Commission
DEP/Wildlife Division
DEP/Fisheries Division
Dept. of Agriculture/Aquaculture Division
DOT/Bureau of Aeronautics and Ports
File No. 200600415-KZ
Desk Copy

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PERMIT

Permit No: 200600415-KZ

Municipalities: Milford/Stratford

Work Area: Housatonic River off property located at the Moses Wheeler Bridge, Bridge No. 00135 Interstate 95

Permittee: CT DOT
Edgar Hurle
P.O. Box 3175436
Newington, CT 06131-7546

Pursuant to sections 22a-359 through 22a-363f of the Connecticut General Statutes ("CGS"), CGS sections 22a-28 through 22a-35, section 401 of the Federal Clean Water Act, as amended, and in accordance with CGS section 22a-98 and the Connecticut Water Quality Standards dated December 2002, a permit is hereby granted by the Commissioner of Environmental Protection ("Commissioner") to replace the existing Moses Wheeler Bridge, reconstruct an existing state boat launching ramp, and conduct tidal wetlands mitigation activities for transportation purposes as is more specifically described below in the SCOPE OF AUTHORIZATION, in the Housatonic River off property identified as the "work area" above.

*****NOTICE TO PERMITTEES AND CONTRACTORS*****

FAILURE TO CONFORM TO THE TERMS AND CONDITIONS OF THIS PERMIT MAY SUBJECT THE PERMITTEE AND ANY CONTRACTOR TO ENFORCEMENT ACTIONS, INCLUDING PENALTIES AND INJUNCTIONS, AS PROVIDED BY LAW.

SCOPE OF AUTHORIZATION

The Permittee is hereby authorized to conduct the following work as described in application #200600415-KZ, including 81 sheets of plans dated November 11, 2005, November 12, 2006, and January 2, 2007 submitted by the Permittee to the Commissioner and attached hereto as follows:

1. replace in its entirety the existing Moses Wheeler Bridge with a new three girder precast segmental concrete superstructure bridge located within the footprint and directly north of the existing bridge as shown on Figures 12, 13, 14 and 15 within an area waterward of the high tide line as follows:

   A. install two temporary trestles with associated access ramps located on the south side of the existing Moses Wheeler Bridge, including the use of 600-mm diameter pipe piles as shown on Figures 16, 17A and 17B;

B. remove the existing six lane Moses Wheeler Bridge which is approximately 28 meters wide by 974 meters long and replace such bridge with a new six lane solid deck concrete bridge superstructure that is 41.52 meters wide by 928.75 meters long, which will carry a IMS conduit, a cable TV conduit, two conduits for highway illumination circuits, a future IMS cable conduit, a fire protection pipe system, and a conduit for the navigation light circuits;

C. remove nine existing concrete piers which support the existing bridge, requiring installation of temporary sheet pile enclosures, the excavation of approximately 7,109 cubic meters of material for the removal of the piers within these temporary enclosures, and backfill with approximately 5,216 cubic meters of clean fill to the elevation of the surrounding substrate or proposed grade as follows:

i. remove existing Pier 4W to an elevation of no less than -0.30 meters as shown on Figure 19 as follows:

a. install temporary sheet pile enclosure, measuring approximately 6.4 meters wide by 31.0 meters long, around the perimeter of the existing pier;

b. excavate a total of approximately 266 cubic meters below the high tide line from within the temporary sheet pile enclosure described in paragraph 1.C.i.a, above;

c. backfill the temporary sheet pile enclosure described in paragraph 1.C.i.a above, with a total of approximately 199 cubic meters of soil material comprised of approximately 139 cubic meters of granular fill and approximately 60 cubic meters of planting substrate/topsoil material as required pursuant to SPECIAL TERMS AND CONDITIONS paragraph 10., below, to the elevation of the proposed finished grade in the Tidal Wetland Creation Site in Wetland Area 1 as shown on Figures 57A and 57B; and

ii. remove existing Pier 3W to an elevation no less than one meter below existing substrates shown on Figures 20 and 21 as follows:

a. install temporary sheet pile enclosure, measuring approximately 14.5 meters wide by 31.1 meters long, around the perimeter of the existing pier and the middle and south column of proposed Pier 5;

b. excavate a total of approximately 975 cubic meters below the high tide line from within the temporary sheet pile enclosure described in paragraph 1.C.ii.a, above;

c. backfill the temporary sheet pile enclosure described in paragraph 1.C.ii.a above, with a total of approximately 886 cubic meters of soil material comprised of approximately 615 cubic meters of granular fill and approximately 271 cubic meters of material as required pursuant to SPECIAL TERMS AND CONDITIONS paragraph 9., below, to the elevation of the surrounding substrate; and

iii. remove existing Pier 2W to an elevation no less than one meter below existing substrates shown on Figure 22 and as follows:

a. install temporary sheet pile enclosure, measuring approximately 7.3 meters wide by 32.0 meters long, around the perimeter of the existing pier;

b. excavate a total of approximately 562 cubic meters below the high tide line from within the temporary sheet pile enclosure described in paragraph 1.C.iii.a, above;

c. backfill the temporary sheet pile enclosure described in paragraph 1.C.iii.a above, with a total of approximately 474 cubic meters of soil material comprised of approximately 239 cubic meters of granular fill and approximately 235 cubic meters of material as required pursuant to SPECIAL TERMS AND CONDITIONS paragraph 11., below, to the elevation of the surrounding substrate; and

iv. remove existing Pier 1W to an elevation of no less than -8.44 meters as shown on Figures 23 and 24 as follows:

a. install temporary sheet pile enclosure, measuring approximately 9.5 meters wide by 32.0 meters long, around the perimeter of the existing pier;

b. excavate a total of approximately 1,456 cubic meters below the high tide line from within the temporary sheet pile enclosure described in paragraph 1.C.iv.a, above;

c. backfill the temporary sheet pile enclosure described in paragraph 1.C.iv.a above, with a total of approximately 1,022 cubic meters of soil material comprised of approximately 719 cubic meters of granular fill and approximately 303 cubic meters of material as required pursuant to SPECIAL TERMS AND CONDITIONS paragraph 11., below, to the elevation of the surrounding substrate; and

v. remove existing Pier 1E to an elevation of no less than -8.44 meters as shown on Figures 25 and 26 as follows:

a. install temporary sheet pile enclosure, measuring approximately 9.5 meters wide by 32.0 meters long, around the perimeter of the existing pier;

b. excavate a total of approximately 1,512 cubic meters below the high tide line from within the temporary sheet pile enclosure described in paragraph 1.C.v.a, above;

c. backfill the temporary sheet pile enclosure described in paragraph 1.C.v.a above, with a total of approximately 1,104 cubic meters of soil material comprised of approximately 801 cubic meters of granular fill and approximately 303 cubic meters of material as required pursuant to SPECIAL TERMS AND CONDITIONS paragraph 11., below, to the elevation of the surrounding substrate; and

vi. remove existing Pier 2E to an elevation of no less than one meter below the existing substrate as shown on Figure 28 and as follows:

a. install temporary sheet pile enclosure, measuring approximately 7.3 meters wide by 32.0 meters long, around the perimeter of the existing pier;

b. excavate a total of approximately 887 cubic meters below the high tide line from within the temporary sheet pile enclosure described in paragraph 1.C.vi.a, above;

c. backfill the temporary sheet pile enclosure described in paragraph 1.C.vi.a above, with a total of approximately 552 cubic meters of soil material comprised of approximately 317 cubic meters of granular fill and approximately 235 cubic meters of material as required pursuant to SPECIAL TERMS AND CONDITIONS paragraph 11., below, to the elevation of the surrounding substrate; and

vii. remove existing Pier 3E to an elevation of no less than one meter below the existing substrate as shown on Figure 28 and as follows:

a. install temporary sheet pile enclosure, measuring approximately 8.7 meters wide by 31.1 meters long, around the perimeter of the existing pier;

b. excavate a total of approximately 837 cubic meters below the high tide line from within the temporary sheet pile enclosure described in paragraph 1.C.vii.a, above;

c. backfill the temporary sheet pile enclosure described in paragraph 1.C.vii.a above, with a total of approximately 564 cubic meters of soil material comprised of approximately 293 cubic meters of granular fill and approximately 271 cubic meters of material as required pursuant to SPECIAL TERMS AND CONDITIONS paragraph 11., below, to the elevation of the surrounding substrate; and

viii. remove existing Pier 4E to an elevation of no less than one meter below the existing substrate as shown on Figures 29 and 30 as follows:

a. install temporary sheet pile enclosure, measuring approximately 7.3 meters wide by 31.1 meters long, around the perimeter of the existing pier;

b. excavate a total of approximately 476 cubic meters below the high tide line from within the temporary sheet pile enclosure described in paragraph 1.C.viii.a, above;

c. backfill the temporary sheet pile enclosure described in paragraph 1.C.viii.a above, with a total of approximately 324 cubic meters of soil material comprised of approximately 96 cubic meters of granular fill and approximately 228 cubic meters of material as required pursuant to SPECIAL TERMS AND CONDITIONS paragraph 9., below, to the elevation of the surrounding substrate; and

ix. remove existing Pier 5E to an elevation of no less than -0.30 meters shown on Figure 32 and as follows:

a. install temporary sheet pile enclosure, measuring approximately 8.7 meters wide by 31.1 meters long, around the perimeter of the existing pier;

b. excavate a total of approximately 139 cubic meters below the high tide line from within the temporary sheet pile enclosure described in paragraph 1.C.ix.a, above;

c. backfill the temporary sheet pile enclosure described in paragraph 1.C.ix.a above, with a total of approximately 92 cubic meters of planting substrate/topsoil material as required pursuant to SPECIAL TERMS AND CONDITIONS paragraph 10., below, to the elevation of the surrounding substrate; and

D. remove a total of approximately 123.4 linear meters of existing wooden bridge fender system and 138 wooden piles, of which 58.5 linear meters and 67 piles are located adjacent to existing Pier 1W and 64.9 linear meters and 71 piles are located adjacent to existing Pier 1E, for the full depth of the existing fender system, as shown on Figure 59;

E. remove a total of approximately 30 linear meters of existing wooden bridge fender system and 32 wooden piles on the southerly side of existing Pier 2W as shown on Figures 13 and 16, to an elevation no less than one meter below existing substrate;

F. remove a total of approximately 43 linear meters of existing wooden bridge fender system and 27 wooden piles along the easterly side of existing Pier 3W as shown on Figures 13 and 16, to an elevation no less than one meter below existing substrate;

G. remove five existing wooden pile dolphins located within the State right-of-way in the vicinity of existing Piers 2W and 1W as shown on Figures 13 and 16, in their entirety.

H. install a total of approximately 112 linear meters of wooden pile supported temporary fender system, of which 55 meters is on the west side and 57 meters is on the east side of the 24.39 meter wide temporary navigation channel to be maintained open during bridge construction between existing Piers 1W and 1E;

I. install the drilled shaft columns for proposed bridge Piers 5, 6, 7, 8, and 9 requiring the use of temporary foundation seal assemblies as shown on Figure 18 and steel casings, approximately 2,948 cubic meters of excavation, 2,940 cubic meters of reinforced concrete, 138 cubic meters of granite for facing for installation of the drilled shafts, approximately 346 cubic meters of clean granular fill, and 317 cubic meters of clean soil backfill material as follows:

i. install Pier 5 as follows as shown on Figures 20 and 21 and as follows:

a. excavate approximately 207 cubic meters of material and drive spud piles and construct erection frame to support the temporary foundation seal assemblies and steel casings described in paragraph 1.I.i.b., below;

b. place and secure temporary foundation seal assemblies on the erection frames described in paragraph I.I.i.a., above, and install the steel drilled shaft casings through the foundation seal assemblies to bedrock;

c. excavate approximately 304 cubic meters of earthen material and 19 cubic meters of bedrock from within the confines of the steel drilled shaft casing described in paragraph I.I.i.b., above;

d. place reinforcing steel cage and approximately 419 cubic meters of concrete within the confines of the excavated area described in paragraph I.I.i.c., above, to form the drilled shaft and concrete column;

e. dewater the temporary foundation seal assemblies described in paragraph I.I.i.b., above, and install approximately 28 cubic meters of granite facing on the pier columns described in paragraph I.I.i.d., above,

f. dismantle and remove the temporary foundation seal assemblies, erection frame and spud piles described in paragraph I.I.i.a., above;

g. restore surrounding areas adjacent to the authorized pier to prework conditions by placing 169 cubic meters of granular fill and approximately 38 cubic meters of clean soil backfill material within the confines of the excavated area described in paragraph I.I.i.a., above, to the elevation of the surrounding substrate and as required pursuant to SPECIAL TERMS AND CONDITIONS paragraph 9., below; and

ii. install Pier 6 as follows as shown on Figures 23 and 24 and as follows:

a. drive spud piles and construct erection frame to support the temporary foundation seal assemblies and steel drilled shaft casings described in paragraph I.I.ii.b., below;

b. place and secure temporary foundation seal assemblies on the erection frames described in paragraph I.I.ii.a., above, and install the steel drilled shaft casings through the foundation seal assemblies to bedrock;

c. excavate approximately 589 cubic meters of earthen material and 19 cubic meters of bedrock from within the confines of the steel drilled shaft casing described in paragraph I.I.ii.b., above;

d. place reinforcing steel cage and approximately 798 cubic meters of concrete within the confines of the excavated area described in paragraph I.I.ii.c., above, to form the drilled shaft and concrete column;

e. dewater the temporary foundation seal assemblies described in paragraph I.I.ii.b., above, and install approximately 28 cubic meters of granite facing on the pier columns described in paragraph I.I.ii.d., above,

f. dismantle and remove the temporary foundation seal assemblies, erection frame and spud piles described in paragraph 1.I.ii.a., above; and

iii. install Pier 7 as follows as shown on Figures 25 and 26 and as follows:

a. drive spud piles and construct erection frame to support the temporary foundation seal assemblies and steel casings described in paragraph 1.I.iii.b., below;

b. place and secure temporary foundation seal assemblies on the erection frames described in paragraph 1.I.iii.a., above, and install the steel drilled shaft casings through the foundation seal assemblies to bedrock;

c. excavate approximately 470 cubic meters of earthen material and 19 cubic meters of bedrock from within the confines of the steel drilled shaft casing described in paragraph 1.I.iii.b., above;

d. place reinforcing steel cage and approximately 661 cubic meters of concrete within the confines of the excavated area described in paragraph 1.I.iii.c., above, to form the drilled shaft and concrete column;

e. dewater the temporary foundation seal assemblies described in paragraph 1.I.iii.b., above, and install approximately 28 cubic meters of granite facing on the pier columns described in paragraph 1.I.iii.d., above,

f. dismantle and remove the temporary foundation seal assemblies, erection frame and spud piles described in paragraph 1.I.iii.a., above; and

iv. install Pier 8 as follows as shown on Figures 27 and 28 and as follows:

a. drive spud piles and construct erection frame to support the temporary foundation seal assemblies and steel casings described in paragraph 1.I.iv.b., below;

b. place and secure temporary foundation seal assemblies on the erection frames described in paragraph 1.I.iv.a., above, and install the steel drilled shaft casings through the foundation seal assemblies to bedrock;

c. excavate approximately 403 cubic meters of earthen material and 19 cubic meters of bedrock from within the confines of the steel drilled shaft casing described in paragraph 1.I.iv.b., above;

d. place reinforcing steel cage and approximately 554 cubic meters of concrete within the confines of the excavated area described in paragraph 1.I.iv.c., above, to form the drilled shaft and concrete column;

e. dewater the temporary foundation seal assemblies described in paragraph 1.I.iv.b., above, and install approximately 28 cubic meters of granite facing on the pier columns described in paragraph 1.I.iv.d., above,

f. dismantle and remove the temporary foundation seal assemblies, erection frame and spud piles described in paragraph 1.I.i.a., above; and

v. install Pier 9 as follows as shown on Figures 29 and 30 and as follows:

a. excavate approximately 455 cubic meters of material and drive spud piles and construct erection frame to support the temporary foundation seal assemblies and steel casings described in paragraph 1.I.v.b., below;

b. place and secure temporary foundation seal assemblies on the erection frames described in paragraph 1.I.v.a., above, and install the steel drilled shaft casings through the foundation seal assemblies to bedrock;

c. excavate approximately 425 cubic meters of earthen material and 19 cubic meters of bedrock from within the confines of the steel drilled shaft casing described in paragraph 1.I.v.b., above;

d. place reinforcing steel cage and approximately 507 cubic meters of concrete within the confines of the excavated area described in paragraph 1.I.v.c., above, to form the drilled shaft and concrete column;

e. dewater the temporary foundation seal assemblies described in paragraph 1.I.v.b., above, and install approximately 28 cubic meters of granite facing on the pier columns described in paragraph 1.I.v.d., above,

f. dismantle and remove the temporary foundation seal assemblies, erection frame and spud piles described in paragraph 1.I.v.a., above;

g. restore surrounding areas adjacent to the authorized pier to prework conditions by placing 265 cubic meters of granular fill and approximately 190 cubic meters of planting substrate/topsoil material as required pursuant to SPECIAL TERMS AND CONDITIONS paragraph 10., below, to the elevation of the surrounding substrate within the confines of the excavated area described in paragraph 1.I.v.a., above; and

J. install a total of 123.4 meters of new wooden pile supported fender system, of which 58.5 meters is located along the west side and 64.9 meters is located along the east side of the navigation channel between Piers 6 and 7, as shown on Figures 16, 17A and 17B.

2. conduct tidal wetland creation on the east and west sides of the river as follows:

A. construct wetland mitigation in Wetland Area 1 on the west bank of the Housatonic River in the footprint of the proposed bridge and the area south of the bridge to the State's right-of-way limit as shown on Figures 57A and 57B, as follows:

i. excavate approximately 1,900 cubic meters of material to facilitate tidal wetland creation described in paragraph 2.A., above;

ii. place approximately 576 cubic meters of planting substrate/topsoil material as required pursuant to SPECIAL TERMS AND CONDITIONS paragraph 10., below, atop the excavated area described in paragraph 2.A., above;

iii. conduct tidal wetland plantings in the planting substrate/topsoil material described in paragraph 2.A.ii. above, and as specified in "Notes" on Figure 57B; and

B. construct wetland mitigation in Wetland Area 2 on the east bank of the Housatonic River in the footprint of the proposed bridge and the area north of the bridge as shown on Figures 56 and 57, as follows:

i. excavate approximately 1,100 cubic meters of material to facilitate tidal wetland creation described in paragraph 2.B., above;

ii. place approximately 426 cubic meters of planting substrate/topsoil material as required pursuant to SPECIAL TERMS AND CONDITIONS paragraph 10., below, atop the excavated area described in paragraph 2.A., above;

iii. conduct tidal wetland plantings in the planting substrate/topsoil material described in paragraph 2.A.ii. above, and as specified in "Notes" on Figure 57; and

3. remove and reconstruct the State boat launch ramp in Milford on the south side of the Moses Wheeler Bridge within an area waterward of the high tide line as shown on Figure 58, as follows:

A. excavate approximately 605 cubic meters of material, including the removal of the existing boat launch ramp and concrete abutment ramp, and place approximately 44 cubic meters of granular fill to prepare the subgrade to correct line and grade on which to construct the new boat launch ramp;

B. place approximately 45 cubic meters of standard riprap on prepared subgrade as described in paragraph 3.A., above, at bottom of new ramp and place approximately 170 cubic meters of special riprap as subbase material under the new precast concrete panels as described in paragraph 3.D., below, from the bottom to top of the ramp;

C. lay steel rails on the special riprap subbase material as described in paragraph 3.B., above, and set rails into the riprap subbase to establish correct line and grade;

D. lower approximately 91 cubic meters of interlocking precast concrete panels into place on the steel rails described in paragraph 3.C., above, keying and pushing panels into position at the

lower concrete support blocks, described in paragraph 3.E., below, and repeat this precast panel installation procedure until the boat launch ramp surface is complete;

E. construct two intermediate concrete support blocks by placing approximately 20 cubic meters of concrete at approximately the third points along the ramp during installation of the precast concrete panels as described in paragraph 3.D., above;

F. construct a concrete anchor wall at the top of the boat ramp panels by placing approximately 10 cubic meters of concrete to secure the installed precast concrete panels as described in paragraph 3.D., above;

G. construct two concrete abutment end blocks at the top of the boat launch ramp as ramp access to new floating docks by placing 29 cubic meters of concrete;

H. place approximately 72 cubic meters of bituminous concrete pavement and processed aggregate base material at the top of the boat launch ramp to meet the parking lot and access road pavement; and

I. install two 2.4 meter wide x 30 meter long floating docks each supported by 4 timber piles located along the edges of the proposed boat launch ramp as shown on Figure 58 of the plans attached hereto.

UPON INITIATION OF ANY WORK AUTHORIZED HEREIN, THE PERMITTEE ACCEPTS AND AGREES TO COMPLY WITH ALL TERMS AND CONDITIONS OF THIS PERMIT.

SPECIAL TERMS AND CONDITIONS

1. Except as specifically authorized by this permit, no equipment, material or debris shall be deposited, placed or stored in any tidal wetland or watercourse, nor shall any tidal wetland or watercourse be used as a staging area or accessway other than as provided herein.

2. Prior to the demolition of the existing bridge authorized herein, the Permittee shall submit for the review and written approval of the Commissioner a temporary protective barrier system plan ("Debris Containment Plan") for the existing bridge to contain debris. The plan shall include the type, size, location, and scheduled maintenance plan of the barriers, and shall assess any navigational conflicts. The review and approval will not be unreasonable withheld.

3. Prior to the commencement of work on-site, the Permittee shall install and maintain a sediment control system ("SCS") along all shoreline areas to prevent sediments from migrating into the Housatonic River. The SCS shall be installed within the approximate areas identified on Figures 7, 20, 29, 40, 46 and VS-2 of the plans attached hereto and in accordance with Connecticut Guidelines for Soil Erosion and Sediment Control, DEP-Bulletin 34.

4. Unless otherwise authorized in writing by the Commissioner, the Permittee shall develop and submit a Temporary Boating Access Plan ("Plan") for the review and written approval of the

Commissioner. Such Plan, if found to be feasible and prudent by the Commissioner, shall provide a mitigation proposal for the temporary loss of public boating access at the Milford public boat launch facility during the reconstruction of the Moses Wheeler Bridge. Such Plan shall also include a schedule for such mitigation. Such Plan shall be submitted to the Commissioner no later than twelve months after the issuance of this authorization. The Permittee shall implement the Plan in accordance with the approval of such Plan as directed by the Commissioner.

5. Prior to the reconstruction of the public boat launch ramp described in the SCOPE OF AUTHORIZATION paragraph 3., above, the Permittee shall install and maintain in optimal operating condition around the perimeter of the work site a turbidity control curtain until the work is completed and the site has been stabilized. All in water work to complete the reconstruction of the boat launch ramp shall also take place during low water conditions.

6. Not later than thirty (30) days prior to the mooring of barges authorized herein, the Permittee shall submit for the Commissioner's review and written approval a Barge Location Plan for construction and dewatering barges.

7. The Permittee shall maintain a minimum of a 12.1 meter (40-foot) wide navigational channel under the Moses Wheeler Bridge at all times except for the designated full channel closure time periods described in Figure CHN-1 of the plans attached hereto

8. Prior to the demolition of the existing bridge piers authorized in the SCOPE OF AUTHORIZATION paragraph 1.C., above, the Permittee shall submit for the review and written approval of the Commissioner a plan ("Backfill Plan") for backfilling existing Piers 3W and 4E, and proposed Pier 5 as described in the SCOPE OF AUTHORIZATION paragraphs 1.C.ii. and 1.C.viii., and 1.I.i., respectively with a top 1 meter layer of soil material that is similar to surrounding harbor bottom material. The plan must include sediment grain size data that characterizes the top 33 cm layer of bottom sediment material adjacent to each bridge pier authorized to be removed from areas waterward of the high tide line. Such sediment sample data must contain the existing grain size data and a sediment description.

9. The Permittee shall place a 0.3 meter deep layer of natural or manmade planting substrate ("soil") containing no less than 75% sand by weight and with an organic content no less than 10% and no more than 15% for the backfilling of the demolished upper 33 cm layer of existing bridge Piers 4W and 5E, all disturbed areas waterward of the high tide line associated with the tidal wetland mitigation plan, and the backfilling of proposed bridge Pier 9 as described in the SCOPE OF AUTHORIZATION paragraphs 1.C.i. and 1.C.ix., 2., and 1.I.v., respectively. The soil must be analyzed by USDA-approved methodology for organic matter by loss-ignition of oven-dried samples dried at 105 degrees centigrade. The mineral fraction must be analyzed to determine weight percentage of sand, as determined after passing a 2-millimeter sieve. Sand particles are defined to be between 0.05 and 2.0 millimeters in diameter. The soil must be free of seed and roots of invasive species and inspected and approved by the Connecticut Department of Transportation Office of Environmental Planning prior to its use.

10. The Permittee shall backfill existing demolished Piers 2W, 1W, 1E, 2E and 3E described in the SCOPE OF AUTHORIZATION paragraphs 1.C.iii. through 1.C.vii. with 1 meter layer of material that includes a top 15 cm layer of oyster cultch (shell) or other shell that is acceptable to the Department of Agriculture/Bureau of Aquaculture.

11. The Permittee shall conduct water monitoring for elevated turbidity levels from June 1st through September 30th, inclusive, of any year while conducting work to remove existing bridge piers or to install new bridge piers authorized in the SCOPE OF AUTHORIZATION paragraphs C. and I., above, to protect spawning shellfish. Such water monitoring shall include taking sample readings hourly no more than 50 feet upstream and downstream of either bridge pier demolition or installation work. If at any time during such activity water readings are increased by more than 5 n.t.u. over ambient, the Permittee shall immediately cease all work and modify work conditions to reduce on-site turbidity levels. The Permittee shall not recommence work until water readings have resumed to a level that is not more than 5 n.t.u. over ambient.

12. The Permittee shall not conduct any pile driving or driving of sheet pile with impact hammers for more than twelve hours per day from April 1st through June 30th, inclusive, of any year in order to protect the upstream migration of anadromous fish. Such work is prohibited during any two consecutive 12-hour periods during which pile driving or driving of sheet pile with impact hammers occurs during a 24-hour period.

13. Prior to the demolition of the existing bridge authorized in the SCOPE OF AUTHORIZATION paragraph 1.C., above, the Permittee shall submit within thirty 30) days prior to the commencement of demolition activities, a Demolition Plan for the Commissioner's review and written approval. Such Demolition Plan must contain a description of the proposed methods for removal of the existing piers, including: the equipment that will be utilized; a discussion of how potential adverse environmental impacts to fisheries resources will be eliminated or minimized; and a timetable for implementation and completion. The Permittee shall conduct all demolition activities in accordance with the plan approved in writing by the Commissioner. If the Permittee elects to utilize blasting to remove the existing piers, then the following conditions shall apply:

    A. blasting activities are prohibited between April 1st and June 30th, inclusive, of any year in order to protect anadromous fish during the spawning period. The Commissioner may consider a written request from the Permittee to modify the closure period. Such request must detail how impacts to anadromous fish will be minimized;

    B. during the blasting activities authorized herein, the Permittee shall conduct an underwater blasting monitoring study. The purpose of the study will be to measure underwater pressure waves, assess fish affected by the blasts and evaluate the effectiveness of mitigation measures. The Permittee shall retain one or more qualified consultants acceptable to the Commissioner to prepare the documents and implement or oversee such study. Not later than one hundred eighty (180) days prior to planned commencement of blasting, the Permittee shall submit for the Commissioner's review and written approval a scope of study that has been prepared in consultation with DEP Inland Fisheries Division staff. The results of such study must be submitted for the Commissioner's review and written approval no later

than six (6) months following the completion of blasting associated activities authorized herein;

C. the Permittee shall notify the DEP-Fisheries Division in writing a minimum of two (2) weeks before blasting is proposed to commence. Such notification shall include a contact person and the dates, times, and locations of proposed blasting;

If the Permittee chooses to utilize hoe ramming to remove the existing piers, then the following conditions shall apply:

D. hoe ramming is prohibited between April 1st and June 30th, inclusive, of any year in order to protect anadromous fish during the spawning period. The Commissioner may consider a written request from the Permittee to modify the closure period. Such request must describe how impact to anadromous fish will be minimized. In particular, the request shall describe the hoe rams that are proposed to be employed and evaluate, either by field study or literature review, the underwater sound levels such hoe rams may produce relative to levels that are harmful to fish;

E. if the applicant demonstrates that the hoe rams to be employed are unlikely to produce harmful sound levels, then hoe ramming may be allowed during the period April 1st and June 30th, inclusive, but only during a period of 12 consecutive hours during any 24 hour period. There are to be no two consecutive 12 hour periods of hoe ramming;

F. the Commissioner may consider a written request from the Permittee to modify the 12 hour closure period. Such request must include the results of a field study or literature study that demonstrates the underwater acoustics produced by the proposed hoe rams will not interfere with the migration of anadromous fish; and

G. if the Commissioner approves hoe ramming activities between April 1st and June 30th, the Permittee may be required to conduct an underwater acoustic monitoring study. The purpose of the study will be to measure and characterize the underwater acoustics generated by the hoe rams and to evaluate, based on existing literature, such acoustics relative to levels that may be harmful to fish or deter fish migration. The Permittee shall retain one or more qualified consultants acceptable to the Commissioner to prepare the documents and implement or oversee such study. The study shall be developed in consultation with the DEP Inland Fisheries Division staff. Not later than one hundred eighty (180) days prior to planned commencement of hoe ramming, the Permittee shall submit for the Commissioner's review and written approval a scope of study for implementing such monitoring study. The results of such study must be submitted for the Commissioner's review and written approval no later than six (6) months following the completion of hoe ramming associated activities authorized herein.

14. The Permittee shall complete the tidal wetland mitigation work described in the SCOPE OF AUTHORIZATION paragraph 2., above, prior to the completion of the construction of the bridge.

15. The Permittee shall only use plant species that are native to Long Island Sound to plant the tidal wetland mitigation areas described in the SCOPE OF AUTHORIZATION paragraph 2. Prior to the initiation of work to complete these activities, the Permittee shall provide to the Commissioner the name and address of the company where the plant source material utilized to complete this work will be secured.

16. The Permittee shall comply with the Monitoring Report and the Maintenance Report as described on sheet MON1 of the plans attached hereto for a minimum of two growing seasons following the completion of work The Permittee shall complete the Monitoring Report and Maintenance Report for the tidal wetland mitigation areas described in the SCOPE OF AUTHORIZATION paragraph 2., above.

17. Prior to the completion of the work authorized herein, the Permittee shall install along the western side of the project site pre-cast infiltration chambers and the six hydrodynamic separators, four located just prior to the infiltration chambers and two located just prior to the discharge into Ferry Creek as shown on Figures nos. 4, 5, 7, 39, 40, EN-1 and EN-2 of the plans attached hereto, to improve the water quality of discharged stormwater into the harbor. The hydrodynamic separators shall be obtained from an approved vendor on the DOT approved products list. In addition, during the first year of operation of the infiltration system and hydrodynamic separators, the Permittee shall submit for review of the Commissioner quarterly inspection reports that document site observations, necessary modifications or repairs, and the volume of sediment removed.

18. Prior to the completion of the work authorized herein, the Permittee shall install wet ponds No.1, 2 and 3 along the project site as shown on Figures nos. 2, 5, 6, 8, 46 and 48 of the plans attached hereto. In addition, during the first year of operation of the detention basins, the Permittee shall submit for review of the Commissioner quarterly inspection reports that document site observations including the presence of mosquitoes during the breeding season, necessary modifications or repairs, methods to address any mosquito breeding concerns, and the volume of sediment removed.

19. The Permittee shall obtain all necessary permits from the DEP Bureau of Water Management for temporary water discharges during construction into the Housatonic River in accordance with sections 22a-430 and 22a-430(b) of the CGS.

20. All temporary trestles authorized herein shall be removed within six (6) months from the completion of the bridge construction and demolition work. Removal shall consist of pulling the piles out entirely. Removal of the trestles shall be conducted in the reverse order of the installation process, to eliminate the staging of construction equipment within regulated areas

21. Any area disturbed by the work authorized herein including areas affected by the placement of temporary fill, shall be restored to their pre-work conditions including reestablishing all original contours and revegetating with suitable vegetation as required in SPECIAL TERMS AND CONDTIONS paragraph 15., above.

22. The Permittee shall not store materials that are either hazardous or prone to erosion, or clean or repair any machinery within 8 meters of a tidal wetland or tidal watercourse.

23. A complete copy of this permit, including its drawings, special conditions, and any amendments, shall be maintained at the work site whenever work is being performed. The Permittee shall assure that all contractors, subcontractors and other personnel performing the authorized work are aware of and understand all permit terms and conditions.

24. Dragging the bottom with a spoil barge, scow, vessel, beam or similar equipment outside of the area authorized by this permit to be dredged or excavated is prohibited.

25. Side casting or in-water rehandling of excavated material is prohibited.

26. Scows or barges shall be loaded and navigated in a manner that prevents spillage and washout of dredged or excavated material. Any incidents shall be immediately reported to the Commissioner.

GENERAL TERMS AND CONDITIONS

1. All work authorized by this permit shall be completed within eight years from date of issuance of this permit ("work completion date") in accordance with all conditions of this permit and any other applicable law.

    a. The Permittee may request a two-year extension of the work completion date. Such request shall be in writing and shall be submitted to the Commissioner at least 30 days prior to said work completion date. Such request shall describe the work done to date, work which still needs to be completed and the reason for such extension. The Commissioner shall grant or deny such request in her sole discretion.

    b. Any work authorized herein conducted after said work completion date or any authorized one year extension thereof is a violation of this permit and may subject the Permittee to enforcement action, including penalties, as provided by law.

2. Not later than two weeks prior to the commencement of any work authorized herein, the Permittee shall submit to the Commissioner, on the form attached hereto as Appendix A, the name(s) and address(es) of any contractor(s) employed to conduct such work and the expected date for commencement and completion of such work.

3. On or before (a) 90 days after completion of the work authorized herein, or (b) upon expiration of the work completion date or any authorized one year extension thereof, whichever is earlier, the Permittee shall submit to the Commissioner "as built" plans prepared by a licensed engineer, licensed surveyor or licensed architect, as applicable, of the work area showing all contours, bathymetries, tidal datums and structures.

4. In conducting the work authorized herein, the Permittee shall not deviate from the attached plans, as may be modified by this permit. The Permittee shall not make de minimis changes from said plans without prior written approval of the Commissioner.

5. The Permittee shall maintain all structures or other work authorized herein in good condition. Any such maintenance shall be conducted in accordance with applicable law including, but not limited to, CGS sections 22a-28 through 22a-35 and CGS sections 22a-359 through 22a-363f.

6. Prior to the commencement of any work authorized hereunder, the Permittee shall cause a copy of this permit to be given to any contractor(s) employed to conduct such work. At the work area the Permittee shall, whenever work is being performed, make available for inspection a copy of this permit and the final plans for the work authorized herein.

7. The Permittee shall notify the Commissioner in writing of the commencement of any work and completion of all work authorized herein no later than three days prior to the commencement of such work and no later than seven days after the completion of such work.

8. The Permittee shall dispose of aquatic sediments in accordance with the terms and conditions of this permit. All waste material generated by the performance of the work authorized herein shall be disposed of by the Permittee at an upland site approved for the disposal of such waste material, as applicable.

9. In undertaking the work authorized hereunder, the Permittee shall not cause or allow pollution of wetlands or watercourses, including pollution resulting from sedimentation and erosion. For purposes of this permit, "pollution" means "pollution" as that term is defined by CGS section 22a-423.

10. Upon completion of any work authorized herein, the Permittee shall stabilize all areas impacted by construction, or used as a staging area or accessway in connection with such work.

11. Any document required to be submitted to the Commissioner under this permit or any contact required to be made with the Commissioner shall, unless otherwise specified in writing by the Commissioner, be directed to:

    Permit Section
    Office of Long Island Sound Programs
    Department of Environmental Protection
    79 Elm Street
    Hartford, Connecticut 06106-5127
    (860) 424-3034
    Fax # (860) 424-4054

12. The date of submission to the Commissioner of any document required by this permit shall be the date such document is received by the Commissioner. The date of any notice by the Commissioner under this permit, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date

three days after it is mailed by the Commissioner, whichever is earlier. Except as otherwise specified in this permit, the word "day" as used in this permit means calendar day. Any document or action which is required by this permit to be submitted or performed by a date which falls on a Saturday, Sunday or a Connecticut or federal holiday shall be submitted or performed on or before the next day which is not a Saturday, Sunday, or a Connecticut or federal holiday.

13. The work specified in the SCOPE OF AUTHORIZATION is authorized solely for the purpose set out in this permit. No change in the purpose or use of the authorization work or facilities as set forth in this permit may occur without the prior written authorization of the Commissioner. The Permittee shall, prior to undertaking or allowing any change in use or purpose from that which is authorized by this permit, request authorization from the Commissioner for such change. Said request shall be in writing and shall describe the proposed change and the reason for the change.

14. This permit may be revoked, suspended, or modified in accordance with applicable law.

15. This permit is not transferable without prior written authorization of the Commissioner. A request to transfer a permit shall be submitted in writing and shall describe the proposed transfer and the reason for such transfer. The Permittee's obligations under this permit shall not be affected by the passage of title to the work area to any other person or municipality until such time as a transfer is authorized by the Commissioner.

16. The Permittee shall allow any representative of the Commissioner to inspect the work authorized herein at reasonable times to ensure that it is being or has been accomplished in accordance with the terms and conditions of this permit.

17. In granting this permit, the Commissioner has relied on representations of the Permittee, including information and data provided in support of the Permittee's application. Neither the Permittee's representations nor the issuance of this permit shall constitute an assurance by the Commissioner as to the structural integrity, the engineering feasibility or the efficacy of such design.

18. In the event that the Permittee becomes aware that he did not or may not comply, or did not or may not comply on time, with any provision of this permit or of any document required hereunder, the Permittee shall immediately notify the Commissioner and shall take all reasonable steps to ensure that any noncompliance or delay is avoided or, if unavoidable, is minimized to the greatest extent possible. In so notifying the Commissioner, the Permittee shall state in writing the reasons for the noncompliance or delay and propose, for the review and written approval of the Commissioner, dates by which compliance will be achieved, and the Permittee shall comply with any dates which may be approved in writing by the Commissioner. Notification by the Permittee shall not excuse noncompliance or delay and the Commissioner's approval of any compliance dates proposed shall not excuse noncompliance or delay unless specifically stated by the Commissioner in writing.

19. In evaluating the application for this permit the Commissioner has relied on information and data provided by the Permittee and on the Permittee's representations concerning site conditions, design specifications and the proposed work authorized herein, including but not limited to representations concerning the commercial, public or private nature of the work or structures authorized herein, the water-dependency of said work or structures, its availability for access by the general public, and the ownership of regulated structures or filled areas. If such information proves to be false, deceptive, incomplete or inaccurate, this permit may be modified, suspended or revoked, and any unauthorized activities may be subject to enforcement action.

20. The Permittee may not conduct work waterward of the high tide line or in tidal wetlands at this permit site other than the work authorized herein, unless otherwise authorized by the Commissioner pursuant to CGS section 22a-359 et. seq. and/or CGS section 22a-32 et. seq.

21. The issuance of this permit does not relieve the Permittee of his obligations to obtain any other approvals required by applicable federal, state and local law.

22. Any document, including but not limited to any notice, which is required to be submitted to the Commissioner under this permit shall be signed by the Permittee and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows: "I have personally examined and am familiar with the information submitted in this document and all attachments and certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief, and I understand that any false statement made in this document or its attachments may be punishable as a criminal offense."

23. This permit is subject to and does not derogate any present or future property rights or powers of the State of Connecticut, and conveys no property rights in real estate or material nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the property or activity affected hereby.

Issued on 8/18, 2008

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Gina McCarthy
Commissioner

Permit Application No. 200600415-KZ

OFFICE OF LONG ISLAND SOUND PROGRAMS

APPENDIX A

TO: **Permit Section**
Department of Environmental Protection
Office of Long Island Sound Programs
79 Elm Street
Hartford, CT 06106-5127

PERMITTEE: CT DOT
Edgar Hurle
P.O. Box 316546
Newington, CT 06131-7546

Permit No: 200600415-KZ, Milford/Stratford

CONTRACTOR 1: _____

Address: _____

_____

Telephone #: _____

CONTRACTOR 2: _____

Address: _____

_____

Telephone #: _____

CONTRACTOR 3: _____

Address: _____

_____

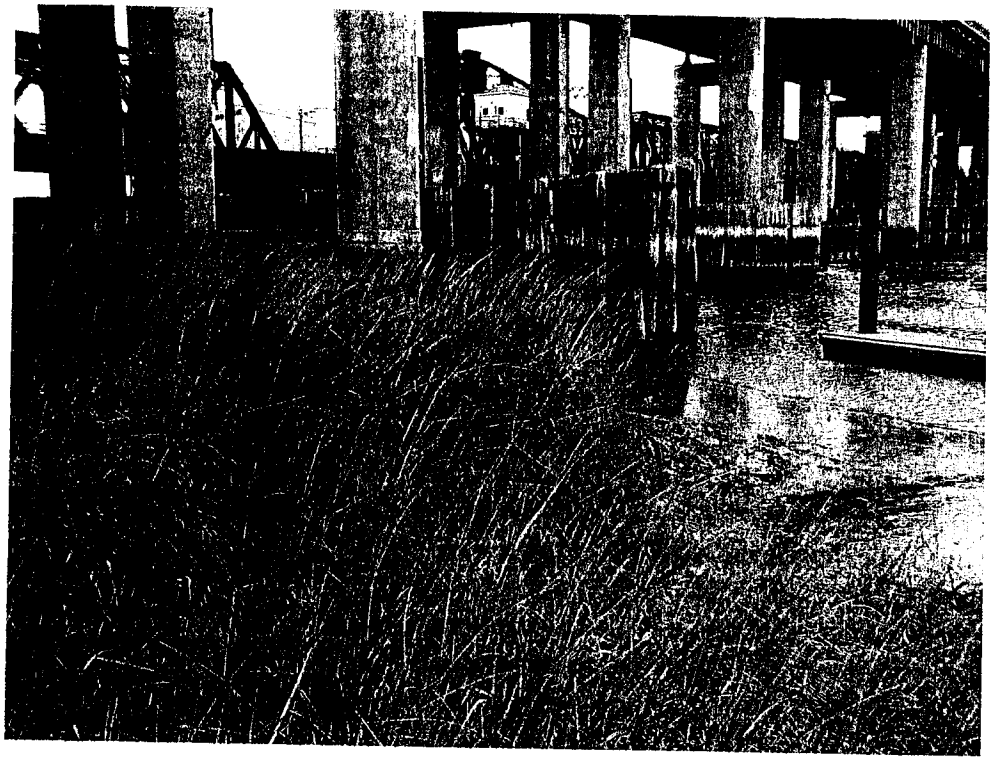
Telephone #: _____

EXPECTED DATE OF COMMENCEMENT OF WORK: _____

EXPECTED DATE OF COMPLETION OF WORK: _____

PERMITTEE: _____
(signature) (date)

Reconstruction of the Moses Wheeler Bridge
Stratford / Milford
DOT Project #138-221
Compensatory Mitigation Plan



Prepared by CTDOT Office of Environmental Planning
July 2008

US Army Corps of Engineers®
New England District

NEW ENGLAND DISTRICT
MITIGATION PLAN CHECKLIST

(see New England District Mitigation Guidance document for clarifying information <http://www.nae.usace.army.mil/reg/Mitigation Plan Checklist Guidance.pdf>)

Project: CTDOT I95 over Housatonic River
File No: NAE-2008-0588
Corps Project Manager: Susan K. Lee, CENAE-R-PEB
City: Stratford and Milford
State: Connecticut
Plan Title: "Reconstruction of the Moses Wheeler Bridge Stratford/Milford DOT Project #138-221 Compensatory Mitigation Plan
Plan Preparer: CTDOT Office of Environmental Planning
Plan Date: June 2008

TABLE OF CONTENTS

A. General Information

1. [**OK**] Mitigation plan and documentation submitted as one complete package.
2. Site location:
   a. [**OK**] Locus map(s)
   Please refer to Figure 1
   b. [**N/A**]Aerial photo(s)
   c. [OK] Latitude/Longitude of mitigation site(s) in decimal format.
   Lat 41.204700° N, Lon -73.109396° E
   d. [OK] 8-digit Hydrologic Unit Code(s) for impact area(s) and mitigation area(s).
   Housatonic Watershed -- 01100005

B. Impact area(s)

1. [OK] Wetland acreage at each impact site.
   The six columns in the table on Page 4 are not labeled. The explanations for the use of negative numbers in the table and the factoring for shading are not clear. What is the relevance of the sheet entitled "Index of Photographs" and a series of

thirty-one photographs? Apparently there may be as many as six impact sites associated with this project.

Please refer to Attachment B1 for a more detailed summary table of impacts. To clarify, six regulated wetland areas were identified within the project limits, however proposed tidal impacts (below the HTL) are limited to Sites 1 and 2. There is a very minor impact at site 3 which is an inland wetland. The identified areas are as follows:
Wetland Area 1 – Tidal Wetland along the Housatonic River (Stratford side)
Wetland Area 2 –Tidal Wetland along the Housatonic River (Milford side)
Wetland Area 3 –Inland Wetland south of the State public boat ramp access
Wetland Area 4 – Tidal Orchard Street Storm Drain Outlet – *no impact*
Wetland Area 5 - Ferry Creek (Inland) – *no impact*
Wetland Area 6 – Unnamed Inland Tributary (Station 3+120) – *no impact*

2. [OK] Wetland classes at each impact site.
Presumably, this will be clarified when column headings are added to the table.

Impacts at Sites 1 and 2 will occur to open water/river bottom of the Housatonic River, intertidal mudflats and vegetated tidal wetlands (Saltmarsh), as outlined in Attachment B1. The impact at site 3 will occur to a small Riverine system that is an unnamed tributary to the Housatonic River.

3. [**N/A**] Stream(s) at each impact site.

4. [OK] Describe both site specific and landscape level wetland and stream functions and values at each impact site.

Although areas of tidal wetland areas 1 and 2 are disturbed by the nearby development and anthropogenic influences, primary functions and values are still present. These swaths of tidal wetland still perform the functions of shoreline stabilization, nutrient uptake and habitat for coastal wildlife. Site 3, again, although disturbed by nearby development, performs the function of streambank stabilization and limited wildlife habitat.

5. [OK] Describe type and purpose of work at each impact site.

The Connecticut Department of Transportation (ConnDOT) has classified the Moses Wheeler Bridge as deficient, meaning that the bridge has passed beyond its design life span and a major rehabilitation or replacement of this structure is warranted. The replacement bridge design using current design criteria includes the safety improvement of full-width shoulders (inside and outside) for the travel lanes in both the northbound and southbound directions. This is not a freeway capacity project and the possibility of adding travel lanes to the bridge was not studied.

Various impacts will occur within Sites 1 and 2 as detailed in Attachment B1 due mainly to demolition of the existing bridge piers, construction of new

piers, drainage upgrades, reconstruction of the boat launch, replacement of the fender system and a temporary trestle to access the area.

At site 3, a minor impact of 194 square feet will occur at the edge of an existing outfall which will be re-configured into an outfall for a primary stormwater treatment pond.

Further narrative regarding project resources and proposed impacts is included as Attachment B5

6. OK Relationship to watershed or regional plans for the area discussed.

The proposed bridge replacement project is located within an existing transportation corridor that includes Interstate 95, U.S. Route 1, State Route 110 and the Metro North Railroad New Haven Line. Since the proposed project is a replacement of an existing facility within an established transportation corridor, the proposed site is both suitable and capable of accommodating the proposed use.

C. Mitigation area(s)

1. Background information
   a. OK Mitigation alternatives.

Mitigation has focused on areas within the project limits. Since degraded areas of tidal wetland were present and appeared suitable for mitigation, the alternatives analysis of mitigation sites has focused on maximizing these areas on both sides of the River. The development of the proposed mitigation areas has been done in close conjunction with CTDEP's Office of Long Island Sound staff.

   b. OK Existing wildlife use.

Existing wildlife usage within the proposed mitigation areas is limited due to the presence of existing bridge structure (pier 4W) invasive species (Phragmites) and debris which currently dominate these areas. Wildlife has been observed during various site visits in the general area, notably black ducks and snowy egrets. The proposed mitigation areas are expected to increase the wildlife value of these areas by providing a low marsh environment which is important to many salt marsh species and will also provide a nursery habitat for various finfish.

   c. OK Existing soil.

The tidal marsh on the western (Stratford) side of the Housatonic River is characterized by a substrate along the river that is relatively firm, made up of more mineral soil than mucky peat. A drainage channel exists which is

approximately two feet wide and partially lined with stones, from the Metro North Railroad tracks down to the river. No flowing water has been noted in this channel during the multiple field visits which were conducted. There is lumber and other debris scattered through the area. Wetland Site 2 is a tidal marsh located on the eastern (Milford) side of the Housatonic River. The substrate of the wetland along the bank of the Housatonic River is a dark mucky peat with *Spartina alterniflora* and *Phragmites australis* along the shore. The existing boat launch ramp and the concrete piers for the Moses Wheeler Bridge affect the typical pattern of wetland vegetation that would normally be seen. An area of tidal mud flat is present from below the tidal vegetation limit to the mean low water line.

d. [07] Existing vegetation.

Within Site 1, the vegetative community of the tidal wetland in close proximity to the river consists of *Spartina alterniflora* and *Phragmites australis*. There is an area beneath the existing bridge and in the vicinity of the marina where the vegetation is disturbed and it appears that this area is periodically mowed. Portions of this disturbed area appear to support cord grass and stunted reed grass, and should be capable of supporting these tidal wetland species if the area remained undisturbed. A sketch of the vegetation limits is provided on Fig VS-1. An area of tidal mud flat is present from below the tidal vegetation limit to the mean low water line. VS-1

At Site 2, *Spartina alterniflora* and *Phragmites australis* are present along the shore. The existing boat launch ramp and the concrete piers for the Moses Wheeler Bridge affect the typical pattern of wetland vegetation that would normally be seen. An area of tidal mud flat is present from below the tidal vegetation limit to the mean low water line. A sketch of the vegetation limits is provided in the upper portions of Fig VS-2. Further inland the plant community consists of quaking aspen *(Populas tremuloides)*, cottonwood *(Populas deltoides)*, staghorn sumac *(Rhus typhina)*, red maple *(Acre rubrum)*, and shadbush *(Amelanchier canadensis)*. Garlic mustard (*Alliaria officinalis)*, climbing false buckweed *(Polygonum scandens)*, and pale corydalis *(Corydalis sempervirens)* dominate the herbaceous layer. A watercourse flowing from the east (Site 3) leads into Wetland Area 2. VS-2

Impact at Site 3 will occur at the extreme upland fringe of an unnamed tributary to the Housatonic River. The existing storm drainage system outfall is characterized by a concrete lined channel. Vegetation in the area of proposed impact is dominated by red maple and multiflora rose. The area of the stormwater basin itself is currently an abandonded residential property, which has been taken by the State for Stormwater Quality improvements.

e. [08] Surrounding land uses.

The freeway corridor through the project site is a built up urban area. The site supports the freeway Interstate-95 that includes the existing Moses Wheeler

Bridge over the Housatonic River between the Town of Stratford and City of Milford, Connecticut. A State maintained public boat ramp for the Housatonic River is present on the Milford side of the river. There is a Metro North Railroad (MNRR) movable bridge crossing the Housatonic River (the Devon Bridge) immediately upstream (north) of the Moses Wheeler Bridge. To the south (downstream) is the Washington Bridge carrying U. S. Route 1 across the Housatonic River.

Adjacent land use in Stratford includes: The Dock Shopping Center and The Dock Marina, MNRR New Haven Line tracks, Dresser Industries, State Route 110 and U.S. Route 1, two shopping centers (Stratford Crossing Shopping Center and Stratford Square Shopping Center) and other commercial and residential properties. The land use in Milford includes: MNRR New Haven Line tracks, the NRG Energy Facility (Devon Power Generating Facility), commercial and residential properties.

The project begins in Stratford in the vicinity of Interchange 33 where I-95 crosses over Longbrook Avenue. The project extends a distance of approximately 2.3 kilometers, or approximately 1.5 miles, easterly across the Housatonic River and into Milford. The project ends on I-95 just west of Interchange 34 in Milford.

f. [N/A] ? USFWS and/or NOAA Clearance Letter or Biological Opinion

According to a January 2007 letter from the CTDEP Natural Diversity Database and coordination with DEP Wildlife Division during the permitting process, State listed species are present within the general project area. State Endangered Peregrine Falcons are utilizing the airspace and a nesting box nearby at the Devon Power Plant. This project was determined to have no impact on the birds or their habitat by CTDEP Wildlife Division, as stated in a January 31, 2007 letter. Atlantic sturgeon, a State Threatened species are also known to occur within the project limits. Best Management Practices as outlined in the *State of Connecticut Department of Transportation, Standard Specifications for Roads, Bridges and Incidental Construction, Form 816, Section 1.10* (BMP's), proper water handling and time of year restrictions on certain construction activities and aspects of in-water work which have been coordinated with the CTDEP Marine Fisheries Division and National marine Fisheries are expected to properly protect fisheries resources.

g. [OK] SHPO Cultural Resource Clearance Letter

A "no effect" letter dated November 9, 2006 is provided as Attachment Cg

2. Mitigation proposed
   a. [OK] Wetland acreage and mitigation type proposed at each site.
   See comment at B1 above

The plan involves compensatory areas on both the Stratford and Milford sides of the Housatonic River. On the Milford side of the river, 432.4 square meters of mitigation will be constructed, and on the Stratford side, 701.7 square meters will be created, for a total tidal wetland area of 1,134.1 square meters.

PM: NOTE IMPACT VS MIT RATIOS

Tidal wetland (low salt marsh) mitigation sites are proposed within Wetland Areas 1 and 2 with a goal to reduce the coverage of the *Phragmites australis* an invasive species which diminishes functions and values within tidal wetlands.

***Spartina patens* will be planted in the higher portions of the low salt marsh and *Spartina alterniflora* will be planted in the lower areas. Various salt tolerant shrubs native to the region will be utilized along the slopes leading down to these areas to help stabilize the area and provide food and cover for wildlife. Species include but are not limited to groundsel bush *(Baccharis halimifolia)*, high tide bush *(Iva frutescens)*, and sweet gale *(Myrica gale)*. Please Refer to Ex. APP -14. The mitigation plan also includes construction oversight by a qualified wetland scientist from the Office of Environmental Planning as well as submission of monitoring reports to CTDEP for approval for a minimum of two growing seasons following construction.**

In addition, suitable organic backfill material will also be placed in the area where existing bridge piers 4W and 5E are removed, and around the area where proposed pier 9 will be constructed. These areas are expected to self seed with *Spartina* species over time.

Potential shading of the proposed mitigation sites was also taken into consideration in order to ensure their success. Cross sections at the center of the wetland mitigation sites were developed for the shading impact study. The bottom of the proposed bridge will be approximately 17.6 meters (58± feet) above the proposed wetland mitigation area in Wetland Area 1 and approximately 21.2 meters (70± feet) at Wetland Area 2. The study determined that the proposed mitigation sites will receive ample sunlight to succeed.

b. [OK] Wetland classes (e.g., Cowardin, et. al. and hydrogeomorphic classification) proposed at each site.

See comment at B2 above

Low marsh with a transitional slope of high marsh is proposed. Areas of mudflat and River bottom will also be restored upon removal of existing bridge structure elements.

c. [**OK**] Site specific and landscape level functions and values proposed at each site.

d. [**OK**] Describe nature of any stream mitigation.

e. OK Reference site(s).

Reference is made to the interface between the Phagmites and Spartina at "0.7 meters." Presumably an undisturbed area along shoreline near the mitigation site could serve as a reference for comparison with the constructed/restored areas. These comparisons between the mitigation site and a reference area are also meaningful during post construction evaluation.

The proposed wetland mitigation involves regrading (by excavating) an area where the *Phragmites* are currently growing to lower this area to an elevation at which *Spartina* will colonize the area, creating a low salt marsh environment. It was determined by survey means that the boundary line between the existing *Phragmites* and *Spartina* is at approximately elevation 0.7 meters. This elevation was then used as a guide to help determine the possible mitigation areas.

f. OK Design Constraints

Mitigation areas have been expanded to the greatest extent possible while still maintaining stable slopes. Existing development and the need to also balance stormwater treatment measures into the project design have helped determine mitigation boundaries. Beyond these factors, the presence of the Railroad bridge to the north and private properties to the south have further determined wetland mitigation limits. The wetland creation area within site 1 incorporates a vegetated 2:1 slope finished slope adjacent to the upland area. Within the Site 2 mitigation area, a 3:1 slope is being utilized adjacent to the upland (proposed wet pond #2) which will also be vegetated with tidal wetland shrubs.

g. [**OK**] Construction oversight.

h. [**OK**] Project construction timing.

i. [OK] Responsible parties for all aspects of project.

The DOT's Office of Environmental Planning will be responsible for both construction oversight and long term monitoring of the site. These responsibilities are included in the contract specification for "Tidal Wetland Creation" which is included as Attachment C2

j. [OK] Appropriate financial assurances.

The project will be funded with state and federal transportation funds.

k. OK Potential to attract waterfowl and other bird species that might pose a threat to aircraft?

The proposed site is designed to potentially attract waterfowl, however, there are no airports in the immediate area.

D. Hydrology

1. [**OK**] Evidence of adequate hydrology to support the desired wetland or stream. *High marsh, low marsh and mudflats are based on existing ecological indicators on the site.*
   a. [**N/A**] "Typical" year water budget
   b. [**N/A**] "Wet" year water budget
   c. [**N/A**] "Dry" year water budget

2. [OK] Water source(s)

Surface water / tidal flows from the Housatonic River are the proposed water sources for these proposed sites. The proposed grading plan is based on elevations of existing vegetation zones immediately adjacent to the proposed sites on the Housatonic River.

3. [**N/A**] Vernal pool (if any) hydrology is appropriate.

E. Grading Plan

1. Plan View
   a. [**OK**] Existing and proposed grading plans.

   b. [**OK**] Microtopography

   c. [OK] Scale is in the range of 1"=20' to 1"=100'.
   This will become a moot point if final document is provided as PDF and bar=scale is added

A bar scale has been added to Figures C-48 and C-50 dated 7/22/08. The figures will also be provided in pdf format to the ACOE.

   d. [OK] All items on the plan are legible. Electronic documents are encouraged (e.g., Portable Document Format); otherwise plans should be on 8 ½ x 11" sheets.

Plans are on 8 ½ x 11" sheets and also will be provided in pdf format.

   e. [OK] Plans have a bar scale.
   This is a cross-check against the photo-reduction that has altered the stated 1:250 scale

Updated Figures C-48 and C-50 are included which now include an accurate bar scale. These new plates are dated 7/22/08.

   f. [OK] The drawings show the access for maintenance and monitoring.

Access for maintenance and monitoring will be from within the DOT right-of-way. On the western side, access will be from the Dock Shopping Center parking lot. The mitigation site on the eastern side will be from the public boat launch access road.

2. [**OK**] Representative cross-sections

3. N/A Other - Specific staff recommendations related to grading.

F. Topsoil

1. [**OK**] Proposed source of topsoil.

2. [**OK**] Twelve or more inches of natural or manmade topsoil in all wetland mitigation areas.

In order to construct the tidal wetland mitigation areas, the areas will be over-excavated and backfilled with an organic mixture to provide for a proper planting substrate. The definition of planting substrate/topsoil has been incorporated into the DOT contract documents.

3. [**OK**] Appropriate organic content of topsoil.
Proposal stipulates that topsoil will be at least 10% organic content

Natural or manmade planting substrate or topsoil may be used, which shall consist of soils containing *no less than* 75% sand by weight and an organic content no less than 10% and no more than 15%. The soil must be analyzed by USDA-approved methodology for organic matter by loss-on-ignition of oven-dried samples dried at 105 degrees centigrade. The mineral fraction must be analyzed to determine weight percentage of sand, as determined after passing a 2-millimeter (mm) sieve. Sand particles are defined to be between 0.05 and 2.0 mm in diameter. The topsoil must be free of seeds and roots of invasive species and inspected and approved by the DOT's Office of Environmental Planning prior to its application

G. Planting Plan

1. [**OK**] Plans use scientific names.
2. [**OK**] Plant materials are native and indigenous to the area of the site(s); invasive species, nonnative species, and/or cultivars are not proposed for planting or seeding.
3. [**OK**] Vegetation community types or zones are classified in accordance with Cowardin, et al. (1979) or other similar classification system.
4. [**OK**] Plan view drawings show proposed locations of planted stock.
5. [**OK**] More than 50% of the plantings in each zone are structural determinants for the community type designated for that zone.
6. [**OK**] Woody stock density is appropriate.
7. [**OK**] Herbaceous stock density is appropriate.
8. [**OK**] Seed mix composition is provided.

Specifications call for "seeding for shoreline grass establishment..." however seed composition is not disclosed

A copy of the contract specification "Shoreline Grass Establishment" is included as Attachment G8. This seed mix will be applied to all non-inundated mitigation areas. It is important to note that Spartina is expected to self seed within the low marsh, but will also be provided as plugs per the planting plan.

9. [✓] Representative cross section plans showing vegetative community zones.

The Planting Plans have been updated to include a cross section and are provided as Figures C-57 & C-58, dated July 21, 2008.

10. [✓] Relocation of plantings allowed when appropriate.
The following specification is strongly encouraged: During planting, a qualified wetland professional may relocate up to 50 percent of the plants in each community type if as-built site conditions would pose an unreasonable threat to the survival of plantings installed according to the mitigation plan. The plantings shall be relocated to locations with suitable hydrology and soils and where appropriate structural context with other plantings can be maintained.

A copy of the amended contract item "Furnishing, Planting, and Mulching Trees Shrubs, Vines and Ground Cover Plants" is included as Attachment G10, and includes this wording.

11. [✓] Other - Specific staff recommendations related to planting.

H. Coarse Woody Debris and Other Features

[**N/A**] Appropriate amounts and range of decomposition of coarse woody debris are proposed.

I. Erosion Controls

[**N/A**] Erosion control removal deadline is included.
A biodegradable blanket is proposed

J. Invasive and Noxious Species

1. [✓] Risk – includes evaluation of the potential for unwanted species or varieties
A stated goal is, "...to reduce the coverage of Phragmites australis...," however the potential for reinvasion is not disclosed.

Initial excavation of the existing plants and rhizomes will be overseen by a member of DOT's Office of Environmental Planning. It has been the Department's experience that grading to the proper elevation will ensure eradication of the *Phragmites,* as this species will not tolerate regular tidal flushing. During grading, survey will be performed and staked in the field to assure the proper depths. Given these factors, the potential for reinvasion is considered low.

2. [OK] Constraints – regulatory or environmental factors affecting control strategies

The only constraint foreseen in regard to control strategies is that control efforts in regard to invasive species typically cannot be conducted beyond DOT property. Given the large watershed of the Housatonic River, a constant seed source of invasive species is expected at the site.

3. [OK] Control Plan – addresses a scope commensurate with risk & constraints

If Phragmites is encountered within or adjacent to the mitigation site, initial control efforts will likely include hand-pulling and cutting. Proper herbicide application will be utilized if deemed appropriate by OEP staff. If other invasive species are encountered, they will be treated as deemed appropriate by DOT OEP staff for that species.

K. Off-Road Vehicle Use

1. [OK] No off-road vehicle use in immediate vicinity, or if so, control measures addressed.

Off road vehicle use is not expected to be a problem at the site considering it's proximity to the river, proposed depth, and developed nature of the surrounding properties.

2. [N/A] Control plan, if appropriate.

A control plan is not considered necessary by the applicant.

L. Preservation

1. **[N/A]** Adequate buffers
2. **[N/A]** Wetlands within subdivisions are protected along with appropriate buffers.
3. [N/A] Required preservation language is included.

Formal preservation is not proposed as part of the mitigation package

4. [N/A] Plans of preservation area(s).

N/A

5. [OK] Form of legal means of preservation
   The required language is not included. If the State's title to the property or other regulatory mechanisms preclude this requirement, then such considerations should be disclosed.

Long term preservation of the mitigation site is ensured since the Department owns the property on which both mitigation sites are situated. This Right of Way is part of the I-95 corridor and will be kept in perpetuity.

6. N/A Documentation of acceptance by receiving agency (if applicable)

N/A

M. Monitoring Plan

1. [ ] Appropriate monitoring is proposed.
The monitoring proposal is not consistent with current doctrine regarding the format and does not specify a five year monitoring period.

Pending discussion with PM Perhaps Assessment at 1/1.5 OK with reports at 1/2 2 3 yrs.

A monitoring period of two years has been proposed as it has been the Department's experience that tidal wetland mitigation sites do not require nearly as long to establish as inland wetland sites. Tidal sites also do not present many of the challenges that inland sites do, as hydrology is known and the pattern of vegetation zonation can be replicated from areas immediately adjacent to the proposed site. The monitoring plan which was proposed was approved by CTDEP's Office of Long Island Sound Program staff. Given the numerous sites across the State that the Office of Environmental Planning must oversee and monitor each year, it is felt that staffing efforts are better spent on other tasks. For this particular project, the applicant respectfully requests that a two year monitoring period be considered sufficient, with the understanding that if there are any unresolved issues or problems at either site, that monitoring will continue until such issue is resolved or until the five year monitoring period is reached. Details of the proposed monitoring plan are included as Attachment M.

2. [N/A] Project Overview Form will be included with each Annual Monitoring Report.

A Project Overview Form will be included with each Annual Monitoring Report.

3. [N/A] Transmittal and Self-Certification Form will be included with each Annual Monitoring Report.

A Transmittal and Self-Certification Form will be included with each Annual Monitoring Report.

PM: Perhaps post delayed until 5yr.

N. Assessment Plan

[ ] An appropriate assessment plan is proposed and language included.
No assessment strategy is disclosed

An Assessment Plan will be prepared by CTDOT or their consultant and included as part of the monitoring report for the final year. The Assessment Plan will include the information outlined in Attachment N.

O. Contingency

[N/A] Plan for dealing with unanticipated site conditions or changes.

Among the possible elements in a contingency plan, I recommend that the following might deserve some forethought:

1. A spillway and storm drains that are designed to discharge into the mitigation area. Erosion and/or deposition from these features seems a likely threat to the proposed marsh.

2. A broad and heavy wrack line is suggested in some of the photography.

3. There's some evidence that Phragmites will remain a threat; moreover, the proposed "wet pond" appears to introduce a new dimension in the Phragmites equation.

look for this in MIT report recommendations & Assessment.

The applicant agrees that the above concerns are warranted, and offers the following responses:

1. The storm drain outfall present at the western site discharges from a stormwater system which includes 4 hydrodynamic separators and an extensive underground galley infiltration system. These upgrades to the present stormwater system should adequately trap sediment. The spillway located directly adjacent to the eastern mitigation site is from a stormwater pond which is designed to retain the first inch of stormwater runoff. The spillway would only function during higher storm events. These factors, along with regular tidal flushing and storms should naturally help keep the mitigation areas clear of sediment build-up. If excess sediment is noted during inspections, the Office of Environmental Planning will instruct Department Maintenance forces to properly remove the sediment from the area.

2. A heavy wrack line has also been noticed by Department staff during certain seasonal field visits. The numerous existing piers seem to greatly disrupt circulation patterns and normal tidal flows in the immediate area of the bridge. The proposed design incorporates a significant reduction in the number of piers, along with restoration of a more natural tidal vegetation zonation within the immediate area. These changes are expected to help alleviate the current build up of wrack and other (un-natural) debris that currently collect in this area.

3. Within the proposed mitigation areas, Initial excavation of the existing plants and rhizomes will be overseen by a member of DOT's Office of Environmental Planning. It has been the Department's experience that grading to the proper elevation will ensure eradication of the *Phragmites*, as this species will not tolerate regular tidal flushing. During grading, survey will be performed and staked in the field to assure the proper depths. Given these factors, the potential for reinvasion is considered low. Within the higher marsh transition areas, native plantings are proposed to help establish a native shrub zone.

Within the area of the proposed wet pond, much of the area is currently paved, however, rhizomes may be present from the river side. Earth excavation will be necessary in the entire area, which will ensure that no rhizomes from *Phragmites* are present immediately following construction. The wet pond will be on a schedule of regular maintenance and cleaning, and OEP will coordinate with Maintenance forces if Phragmites appears. Cutting and/or use of an approved herbicide would be utilized if deemed appropriate by OEP staff.

Monitoring reports will include notations on invasive species in the area of the wet pond.

P. Long-term Stewardship

Plan for long-term stewardship is included.

Disclosure of the State's title to the property or other legal mechanisms to preserve the mitigation area is not included.

Long term preservation of the mitigation site is ensured since the Department owns the property on which both mitigation sites are situated. This Right of Way is part of the I-95 corridor and will be kept in perpetuity. The Department's Office of Environmental Planning routinely inspects and performs necessary maintenance on mitigation sites throughout the State, long after monitoring report requirements have been fulfilled, and will do so for this site.

Q. Other Comments

The project proponent should become familiar with the wetland mitigation doctrine found at: <http://www.nae.usace.army.mil/reg/index.htm>. Specifically, I recommend that they focus on the guidance contained at:< http://www.nae.usace.army.mil/reg/Mitigation Plan Checklis Guidance.pdf>.

The Department did not intend the original submission to be construed as meeting the requirements of the Mitigation Checklist and apologizes for any confusion. We hope you find this submission more acceptable.

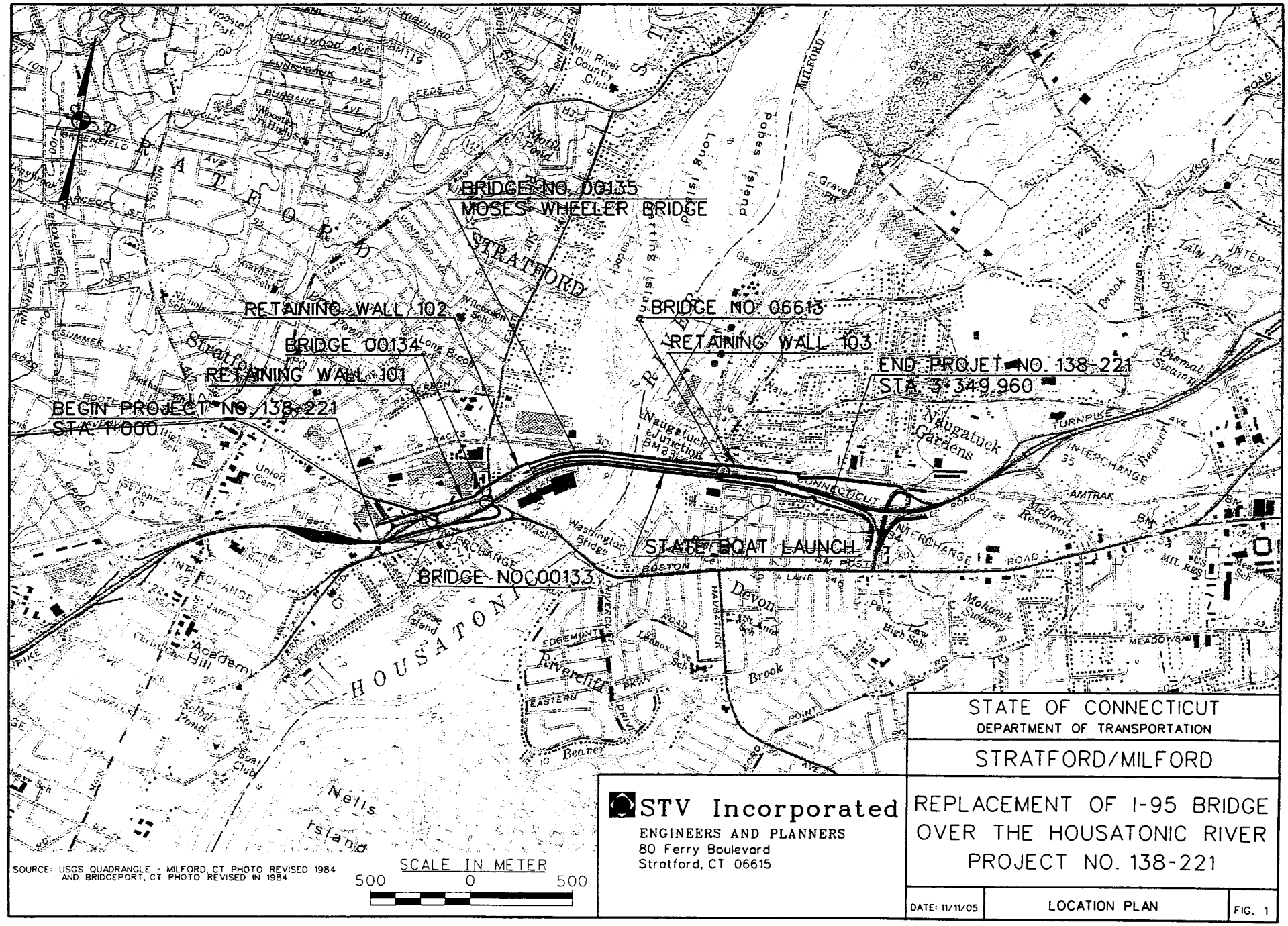
Very good responses! I understand that we may have miscommunicated our documentation needs - Susan and I also apologize for the confusion. Thanks for your very prompt and thorough attention.

Mike

Susan:

My greatest concern at this time is the 2-year monitoring. Recommend a 2-event monitoring with reports at years 2 & 3 and the assessment at year 5.

Mike



STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

STRATFORD/MILFORD

STV Incorporated
ENGINEERS AND PLANNERS
80 Ferry Boulevard
Stratford, CT 06615

REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER PROJECT NO. 138-221

DATE: 11/11/05 | LOCATION PLAN | FIG. 1

Reconstruction of the Moses Wheeler Bridge
State Project No. 138-211
Stratford and Milford, Connecticut

Attachment B1

Summary Table of Temporary Impact Areas and Permanent Restored (Impacted) Areas in Regulated Areas

	Temporary Impacts in m²				Permanent Net Area Restored (Impacted) in m²			
Construction Activity	Vegetated Wetland	Intertidal Flats	Open Water	Total	Vegetated Wetland	Intertidal Flats	Open Water	Total
New Bridge Pier Construction	175.1	75.2	100.8	351.1	(31.5)	(10.5)	(88.5)	(130.5)
Demolition Existing Bridge Piers	276.8	345.4	1,458.3	2,080.5	14.4	96.4	353.8	464.6
Temporary Trestles	15.5	5.6	83.0	104.1	0.0	0.0	0.0	0.0
Temporary Fender Systems	0.0	0.0	38.0	38.0	0.0	0.0	0.0	0.0
Wetland Creation Sites	1,337.5	0.0	0.0	1,337.5	1,134.1	0.0	0.0	1,134.1
Remove Existing Fender Systems (all)	0.0	0.0	0.0	0.0	0.0	0.3	14.1	14.4
New Fender System - Navigation Channel	0.0	0.0	15.0	15.0	0.0	0.0	(15.0)	(15.0)
Reconstruction of Boat Launch Ramp	43.0	21.0	170.0	234.0	61.0	(5.0)	(55.0)	1.0
Totals in m² :	1,847.9	447.2	1,865.1	4,160.2	1,178.0	81.2	209.4	1,468.6
Totals in hectares:	0.185	0.045	0.187	0.416	0.118	0.008	0.021	0.147
Totals in acres:	0.457	0.111	0.461	1.028	0.291	0.020	0.052	0.363

Note: Impacted and restored areas shown in this table are taken from Tables 1, 3A, 3B, and 6 of the US Army Corps Permit Application for the Replacement of the I-95 Bridge over the Housatonic River, prepared for the Conn. Department of Transportation by STV Incorporated, dated January 2007.

Wetland Area 1 – Tidal Wetland along the Housatonic River (Stratford side)

Existing Conditions

The tidal marsh on the western (Stratford) side of the Housatonic River is characterized by a substrate along the river that is relatively firm, made up of more mineral soil than mucky peat. A drainage channel exists which is approximately two feet wide and partially lined with stones, from the Metro North Railroad tracks down to the river. No flowing water has been noted in this channel during the multiple field visits which were conducted. There is lumber and other debris scattered through the area.

The vegetative community of the tidal wetland in close proximity to the river consists of *Spartina alterniflora* and *Phragmites australis*. There is an area beneath the existing bridge and in the vicinity of the marina where the vegetation is disturbed and it appears that this area is periodically mowed. Portions of this disturbed area appear to support cord grass and stunted reed grass, and should be capable of supporting these tidal wetland species if the area remained undisturbed. An area of tidal mud flat is present from below the tidal vegetation limit to the mean low water line. Although areas of this tidal wetland are disturbed by the nearby development and anthropogenic influences, primary functions and values are still present. This swath of tidal wetland still performs the functions of shoreline stabilization, nutrient uptake and habitat for coastal wildlife.

Proposed Impacts - Tidal wetland

Overall, regulated activities within Site 1 will actually result in a net restoration to tidal wetlands of 14.4 square meters. Temporary impacts to 184.4 square meters of *Phragmites* dominated tidal wetland will result from Pier 4W demolition. Temporary impacts to the vegetated tidal wetlands resulting from the placement of the temporary trestle will total 8.5 square meters, with 4.1 square meters of that impact being to *Phragmites*, and 4.4 square meters to *Spartina alterniflora*. The placement of the trestle requires the placement of timber piles in the wetland area for support.

Proposed Impacts – Intertidal flat

At Site 1, permanent impact to the intertidal flats totaling 10.5 square meters will occur as a result of the construction of one drilled shaft for new bridge Pier 5 (column 5N). Temporary impacts totaling 233.3 square meters will occur within the intertidal flat as a result of Pier 5N construction, demolition and removal of existing pier 3W, removal of the temporary timber fender system and the placement of the temporary trestle. The work in the intertidal flat area associated with this side of the river results in a net increase of 32.2 square meters of intertidal flats.

Although the width of the new bridge deck could potentially cast a shadow over 317.9 square meters of vegetated wetland on the Stratford side of the Housatonic River, there will be adequate sunlight during the growing season to support wetland vegetation.

Construction of a tidal wetland creation site, which involves excavation to expand the limits of tidal inundation and the placement of wetland plantings will also occur at Site 1. The area of wetland creation has been maximized in this area to provide for a total of 701.7 square meters.

Wetland Area 2 – Tidal Wetland along the Housatonic River (Milford side)

Existing Conditions

This wetland is a tidal marsh located on the eastern (Milford) side of the Housatonic River. The substrate of the wetland along the bank of the Housatonic River is a dark mucky peat with *Spartina alterniflora* and *Phragmites australis* along the shore. The existing boat launch ramp and the concrete piers for the Moses Wheeler Bridge affect the typical pattern of wetland vegetation that would normally be seen. An area of tidal mud flat is present from below the tidal vegetation limit to the mean low water line. Further inland the plant community consists of quaking aspen *(Populas tremuloides),* cottonwood *(Populas deltoides),* staghorn sumac *(Rhus typhina),* red maple *(Acre rubrum)*, and shadbush *(Amelanchier canadensis).* Garlic mustard (*Alliaria officinalis)*, climbing false buckweed *(Polygonum scandens),* and pale corydalis *(Corydalis sempervirens)* dominate the herbaceous layer. A watercourse flowing from the east leads into Wetland Area 2. Although areas of this tidal wetland are disturbed by nearby development and anthropogenic influences, primary functions and values are still present. Similar to Wetland Area 1, this swath of tidal wetland still performs the functions of shoreline stabilization, nutrient uptake and habitat for coastal wildlife.

Proposed Impacts – Tidal wetland

Impacts below the high tide line at Site 2 consist of 31.5 square meters of permanent impact, 24.5 square meters of which is to *Spartina alterniflora* dominated wetland. This permanent impact will result from the construction of 3 drilled shafts at new bridge Pier 9 (columns 9N, 9M and 9S). Temporary impacts to tidal wetland vegetation will occur as a result of the temporary trestle system, placement of the new bridge Pier 9 and the demolition of pier 5E. The trestle will result in 7 square meters of impact (6.1 square meters in *Spartina alterniflora* and 0.9 meters within *Phragmites*). The demolition and removal of existing bridge Pier 5E (which is only located partially within Wetland Area 2) will temporarily impact 92.4 square meters of wetland, however, all of this impact will be to an area dominated by *Phragmites*. Proper containment for the construction of Pier 9 will result in 143.6 square meters of temporary impact, with the majority of that

impact being in *Spartina alterniflora* dominated wetland. Temporary impacts to vegetated tidal wetland will total 243.0 square meters at Site 2.

Proposed Impacts – Intertidal flat

Proposed work within the intertidal flat area located adjacent to Wetland Area 2 is limited to temporary impacts consisting of the demolition and removal of existing bridge Pier 4E; construction a portion of the temporary enclosure for new pier 9 and construction of the temporary timber trestle system across the area south of the Moses Wheeler Bridge. At Site 2, temporary impacts total 192.9 square meters. The intertidal flat area restored totals 246.9 square meters, for an overall increase of 54 square meters of intertidal flat.

Although the wider bridge deck will potentially shadow 474.5 square meters of vegetated wetland, as calculated by the shadow study, nonetheless, there will be adequate sunlight during the growing season to support wetland vegetation within wetland area 2.

Construction of a 432.4 square meter tidal wetland creation site, which involves excavation to expand the limits of tidal inundation and the placement of wetland plantings will also take place at this site.

Boat Launch

Reconstruction of the State boat launch ramp on the east bank of the river will require excavation and fill within regulated areas. Most of this excavation and fill will be performed in the area occupied by the existing boat launch ramp that is being upgraded. Impacts associated with the upgrade of the boat launch ramps will result in 61 square meters of tidal wetland being restored. There will however, be a permanent impact of 5 square meters to intertidal flats and 55 square meters of river bottom associated with this work. Proposed work consists of removal of the existing stone groin, removal of the existing concrete slab, placement of the proposed concrete abutments (ramps), placement of riprap at the bottom of the ramp, and placement of pre-cast concrete panels for the new ramp.

Access to the public boat ramp and parking area in Milford, will be prohibited during bridge construction for safety considerations. The boat ramp will be reconstructed, improved and opened to the public once construction of this project is complete. The closure of the boat launch ramp during construction will temporarily impact the public that wish to use this facility to launch boats or fish from the shoreline.

The boat launch ramp parking lot has been the subject of several meetings and parking lot design alternative evaluations during the permit application process. Additional parking spaces have been added under the new

Moses Wheeler Bridge and the size of the parking lot has been expanded slightly. These design changes to the boat launch ramp parking area have been reviewed by the DEP Boating Division and they have indicated the revised parking lot plan satisfies their design requirements.

The possibility of improving an existing City of Milford boat ramp at Caswell Cove was investigated during the design and rejected because this facility is undersized and has inadequate right of way to allow for the substantial upgrade and expansion that would be required to improve this facility. There are no sites within the State right of way at this project site that can accommodate a new boat launch ramp.

The City of Milford and the Town of Stratford do maintain boat launch ramp facilities that are open to the public for a fee. The Town of Stratford boat launch is located on the Housatonic River (at Birdseye Street) approximately one mile south of the Moses Wheeler Bridge site. Both towns charge resident and non-resident fees to all users of their ramps. The CTDEP Boating Division and DOT have met with the City of Milford and Town of Stratford to discuss the public use of their boat ramp facilities during the construction of the Moses Wheeler Bridge.

The proposed bridge replacement will not reduce potential opportunities for future water dependent uses or support facilities on adjacent properties once construction is complete. The net reduction in bridge piers in the navigational channel should enhance navigation.

Housatonic River Bottom Impacts

Permanent impacts to the river bottom totaling 103.5 square meters will result from the construction of new piers and the new fender system. The new piers account for 88.5 square meters of this impact, with the remaining 15 square meters due to the new fender system. Specifically, the following work is proposed for the piers within the open water area of the Housatonic River:

- construct 2 drilled shafts at new bridge Pier 5 (columns 5M and 5S);
- construct 3 drilled shafts at new bridge Pier 6 (columns 6N, 6M and 6S);
- construct 3 drilled shafts at new bridge Pier 7 (columns 7N, 7M and 7S);
- construct 3 drilled shafts at new bridge Pier 8 (columns 8N, 8M and 8S);

Temporary impacts totaling 1,591.6 square meters will result from temporary confinement for the construction of new bridge piers, demolition and removal of existing piers, removal of the existing fender system, construction of a

temporary fender system, and the temporary trestle. Specifically, the following work is proposed within the Housatonic River:

- demolish and remove a portion of existing bridge piers 3W (most of this pier is in the intertidal flat area);
- demolish and remove existing bridge piers 2W, 1W, 1E, 2E, and 3E;
- remove existing fender systems east of Pier 3W and south of Pier 2W;
- remove existing timber fender system and construct new timber fender system along the navigation channel;
- construct temporary trestle systems in Milford and Stratford from the river banks to the edges of the federal navigation channel; and
- construct temporary fender system adjacent to the temporary trestle systems along the federal navigation channel

The proposed work within the Housatonic River will result in 1,695.1 square meters of permanent and temporary impact. However, since the footprint of the existing bridge piers being removed is greater than that of the new bridge piers being constructed, the proposed work will result in 1,959.5 square meters of river bottom being restored, for a net gain of 264.4 square meters.

In areas where bridge structures are being demolished, the river bottom will be over-excavated to a depth of approximately 1 meter (3 feet) below the existing elevation. Backfill for each area will be specific to the resource type in the immediate vicinity. The top 1-meter of excavation in the river will be backfilled with a material referred to as "structural soil" which is defined as a sandy loam that will approximate the textural class of the existing soil removed at each excavation area. Backfill material below the top 1-meter shall consist of clean granular fill.

The top 1-meter of excavation in vegetated wetland areas will be backfilled with a planting substrate/topsoil material. Planting substrate/topsoil is defined as a natural or manmade material which consists of soils containing not less than 75% sand by weight and an organic content of between 10% and 15%. Since portions of existing Pier Nos. 3W and 4E are located in intertidal flats, the backfill material to be used in these areas will require the use of a man made mixture of sand, silt and clay size particles having the same proportions as the natural river bottom excavated from within the demolition areas.

The Contractor will sample the river bottom within each enclosure and establish the soil proportions by the USDA Classification System. The structural soil to be furnished by the Contractor shall meet the soil proportions of the natural river bottom. The Department of Agriculture has requested that some of these backfill areas contain a top layer of cultch (crushed shells) to mitigate any adverse environmental impacts to Oyster resources which may be in the area. This method will be utilized in the backfill for Piers 2W, 1W, 1E, 2E and 3E.

Temporary Trestle System

The temporary trestles will convey construction equipment from the construction staging areas over the wetland vegetation areas and open water to the areas of construction, minimizing impacts to the regulated areas. These temporary trestles will be built by crane from the shore out, from uplands or atop the trestle. Removal of the trestles in the reverse procedure will occur after completion of all superstructure work, with trestle removal occurring from atop the trestle or from the shore. Temporary ramps will be constructed at the landward end of these trestles for equipment access. These ramps will be constructed of fill material contained in a three sided sheet pile enclosure.

Temporary impacts are measured by the footprint of the estimated 31 support piles located within the wetland limits. The total temporary impact to tidal wetlands from the trestle system is 15.5 square meters. 5.6 square meters of intertidal flat and 83 square meters of river bottom will be temporarily impacted by the trestle, for a total impact to regulated areas of 104.1 square meters. The temporary trestle will be removed and the impacted areas restored once construction is complete. Other temporary impacts to regulated areas are limited to spud piles, foundation seals and sheet pile enclosures, all of which will be removed once construction is complete. These structures are necessary for construction and to help aid in proper water handling and protection of water resources.

Wetland Area 3 – Wetland south of the public boat ramp access road

This watercourse and associated wetland, drains into the Housatonic River through Wetland Area 2. The width of the stream varies from three to six-feet until it reaches the Housatonic River where the stream opens to meet the river. The impact area will occur at the extreme upland fringe of an unnamed tributary to the Housatonic River. The existing storm drainage system outfall is characterized by a concrete lined channel. Vegetation in the area of proposed impact is dominated by red maple and multiflora rose. The area of the stormwater basin itself is currently an abandonded residential property, which has been taken by the State for Stormwater Quality improvements. At site 3, a total impact of 194 square feet will occur at the edge of an existing outfall which will be re-configured into an outfall for a primary stormwater treatment pond. Minor impacts to Wetland Area 3 have been permitted under DEP file # IWGP-200701088 which was issued by the CTDEP May 8, 2007.

Wetland Area 4 - Orchard Street Storm Drain Outlet

A portion of the freeway storm drain system in Stratford discharges into a storm sewer that is located in Orchard Street. This storm sewer system is routed under Orchard Street and discharges into the Housatonic River. At the location of this discharge, the Housatonic River banks have been developed with mainly

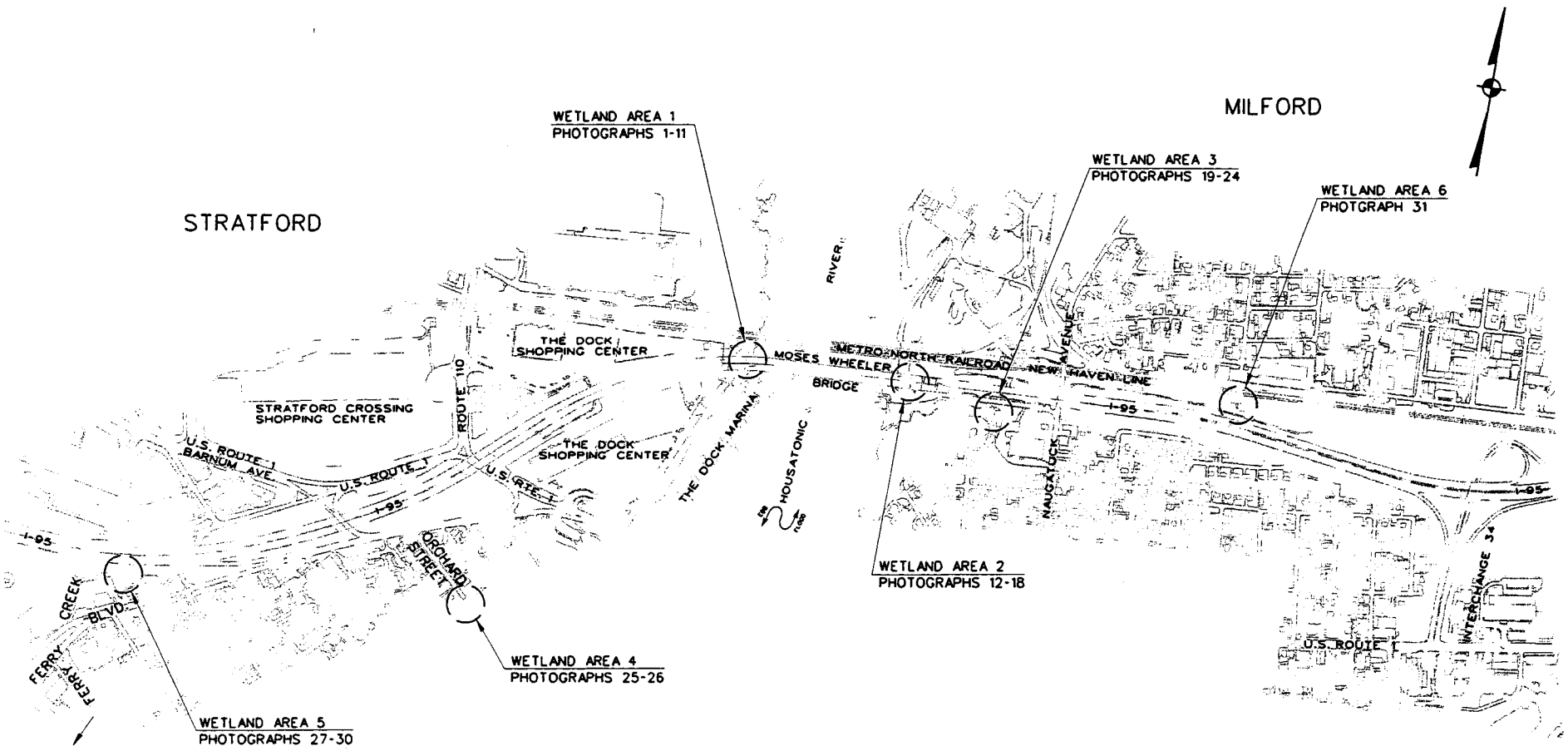
residential waterfront properties with boat docks. The storm sewer outlet creates a small channel with a natural substrate bottom that runs into the Housatonic River. The channel is approximately six feet wide and meanders about forty feet before reaching the river. The channel has some shallow standing water and the border is defined by the vegetative growth, more so than by a change in substrate. Common reed *(Phragmites australis)* primarily grows along the upland side of the wetland and cord grass *(Spartina alterniflora)* grows closer to the river's edge. Aside from the residential lawn grass, other species observed close to the river bottom includes tree-of-heaven *(Ailanthus altissima)*, dogwood *(Cornus spp.)*, poison ivy (*Rhus radicans)* and mountain holly *(Nemopanthus mucronulatus)*. There are no proposed impacts to regulated areas at this site.

Wetland Area 5 - Ferry Creek

This inland wetland watercourse is a riprap-lined channel with a mucky streambed . There are tide gates present in the culverts which pass this watercourse under Broad Street; therefore, this portion of Ferry Creek is not tidally influenced. There are no proposed impacts to regulated areas at this site.

Wetland Area 6 – Unnamed Tributary

This inland wetland is located within a strip of vegetated open space, wedged between the Metro North Railroad and I-95. Hydrology for the wetland is mainly from drainage. The channel is approximately four feet wide with a substrate composed of sand, decomposed vegetative litter and some debris. There are no proposed impacts to regulated areas at this site.



PHOTOGRAPH INDEX PLAN

SCALE: 1:125000

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

STRATFORD/MILFORD

REPLACEMENT OF I-95 BRIDGE
OVER THE HOUSATONIC RIVER
PROJECT NO. 138-221

STV Incorporated
ENGINEERS AND PLANNERS
80 Ferry Boulevard
Stratford, CT 06615

DATE: 3-1-04

INDEX OF PHOTOGRAPHS

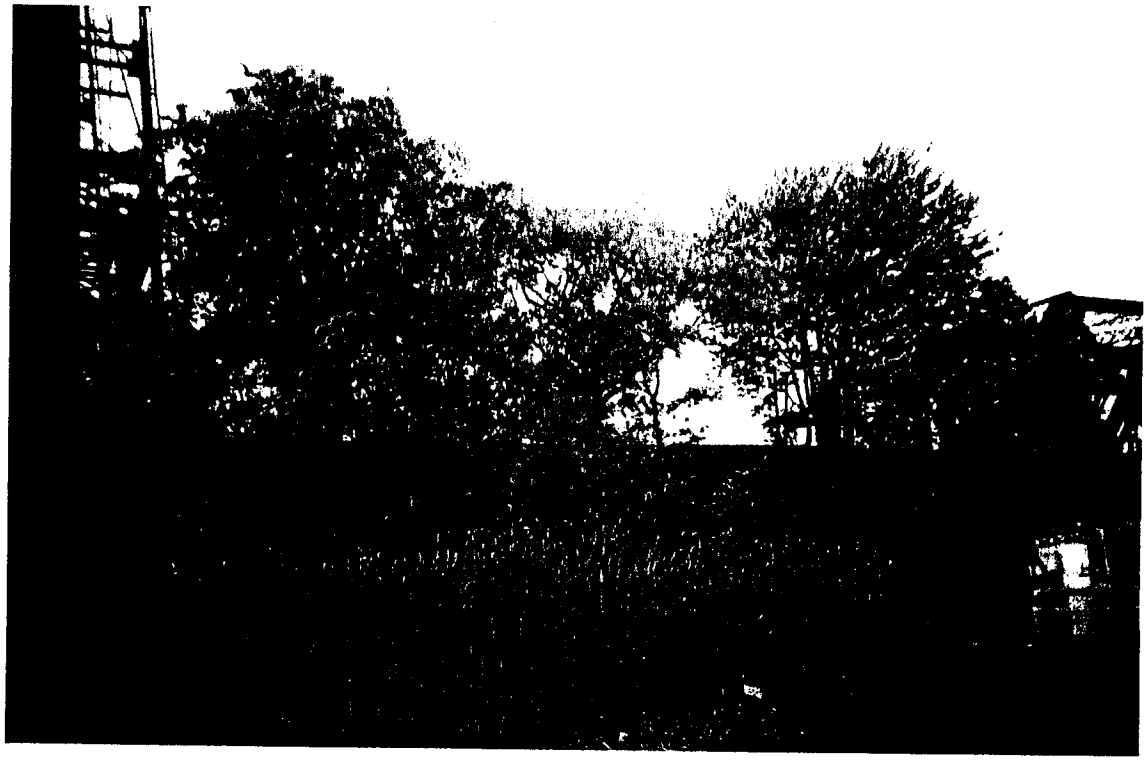
Photograph 1 - Wetland Area 1, Wetlands Along the Housatonic River (Stratford Side)

Fallen trees, wood planks and other debris located among the grasses.

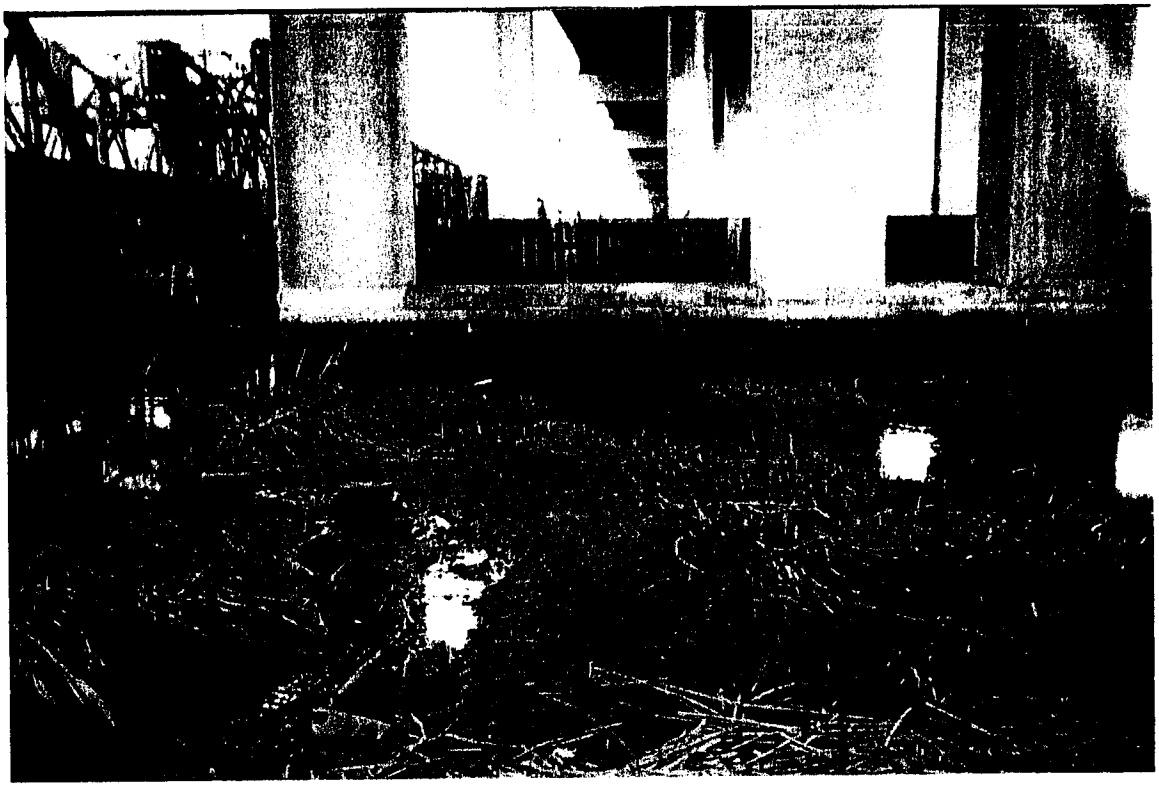
Photograph 2 - Wetland Area 1, Wetlands Along the Housatonic River (Stratford Side)

A small drainage channel, partially lined with large rocks, empties out at the Housatonic River.

Photograph 3 - Wetland Area 1, Wetlands Along the Housatonic River (Stratford Side) Looking Northwest towards the MetroNorth Rail Line.



Photograph 4 - Wetland Area 1, Wetlands Along the Housatonic River (Stratford Side) Looking North towards the MetroNorth rail partly concealed by young trees.



Photograph 5 - Wetland Area 1, Wetlands Along the Housatonic River (Stratford Side)
The west bank of the Housatonic River sparsely covered with grass.

Photograph 6 - Wetland Area 1, Wetlands Along the Housatonic River (Stratford Side)

Looking Southeast from the west bank towards the boat docks.

Photograph 7 - Wetland Area 1, Wetlands Along the Housatonic River (Stratford Side)

Looking Northeast at the Devon bridge crossing and wetland vegetation dominated by common reed and cordgrass.

Photograph 8 - Wetland Area 1, Wetlands Along the Housatonic River (Stratford Side)

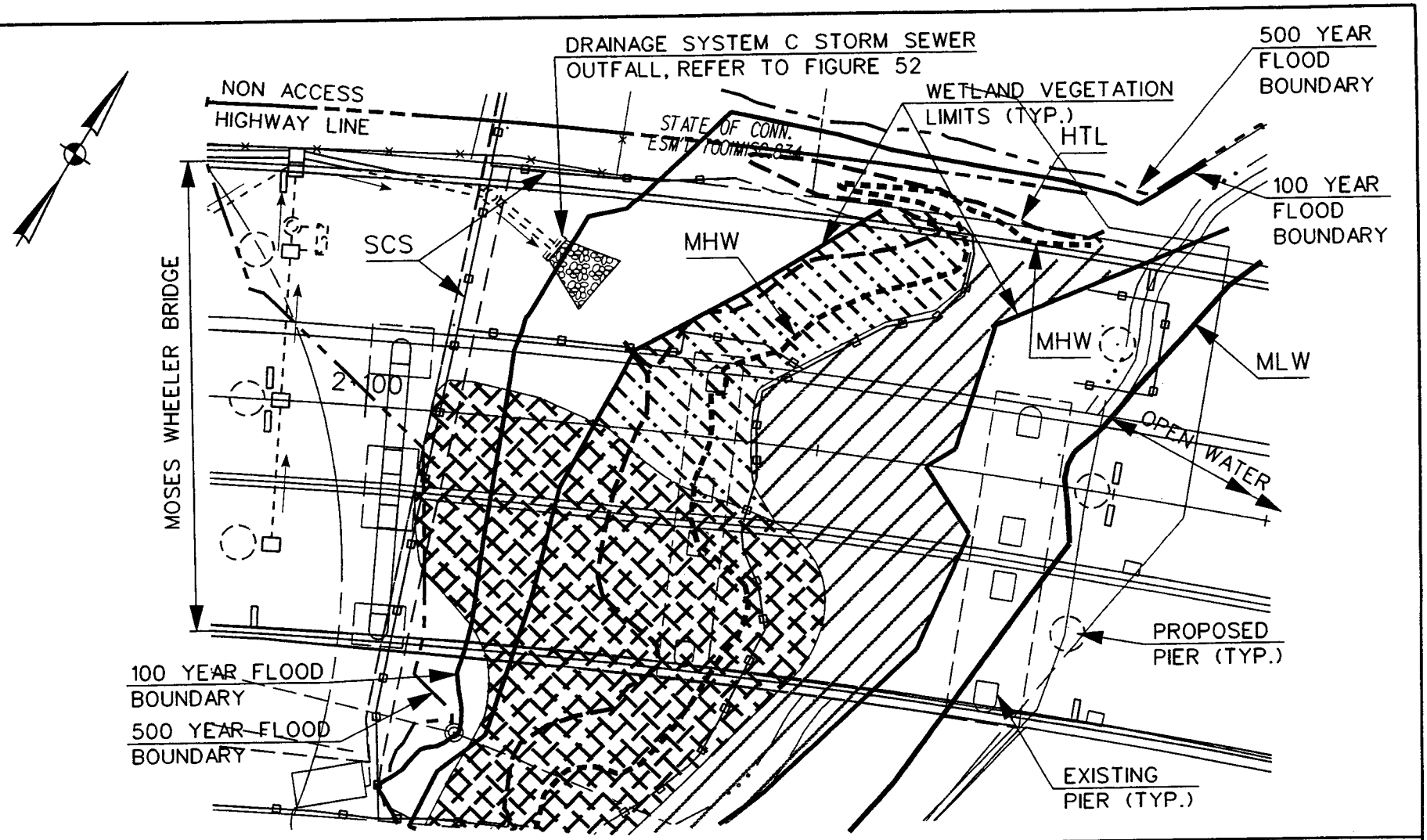
Area of Disturbed Vegetation beneath and south of the Moses Wheeler Bridge.

Photograph 9 - Wetland Area 1, Wetlands Along the Housatonic River (Stratford Side)
Looking South at the lower limit of the wetland vegetation beneath the Moses Wheeler Bridge.

Photograph 10 - Wetland Area 1, Wetlands Along the Housatonic River (Stratford Side)

Looking North at the wetland vegetation and disturbed vegetation areas.

Updated and Referenced Figures



PLAN
SCALE 1:500

LEGEND

- DISTURBED VEGETATION
- PHRAGMITES AUSTRALIS
- SPARTINA ALTERNIFLORA

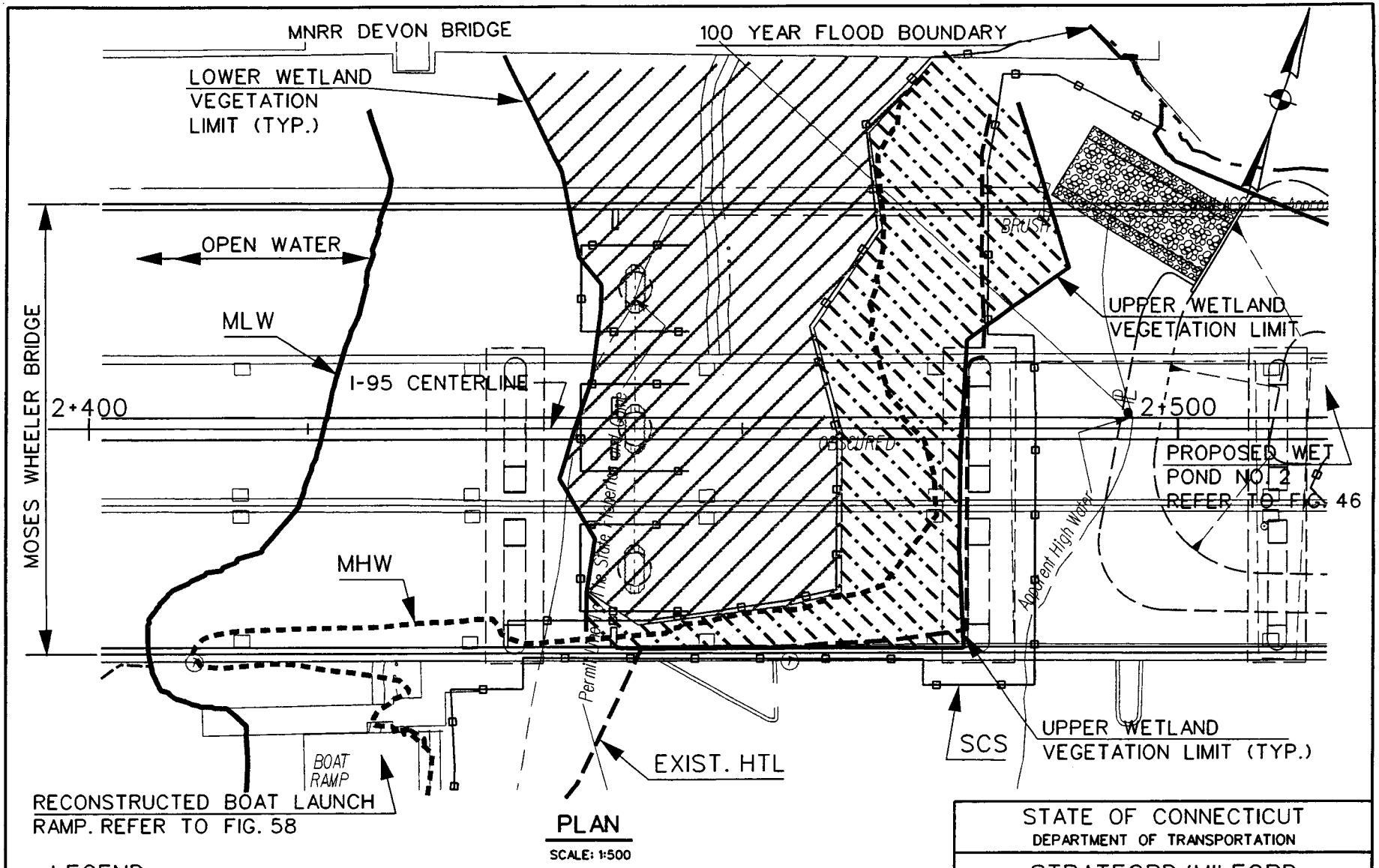
STV Incorporated
ENGINEERS AND PLANNERS
80 Ferry Boulevard
Stratford, CT 06615

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

STRATFORD/MILFORD

REPLACEMENT OF I-95 BRIDGE
OVER THE HOUSATONIC RIVER
PROJECT NO. 138-221

DATE: 11/22/06	VEGETATION SKETCH WETLAND AREA 1	FIG. VS-1



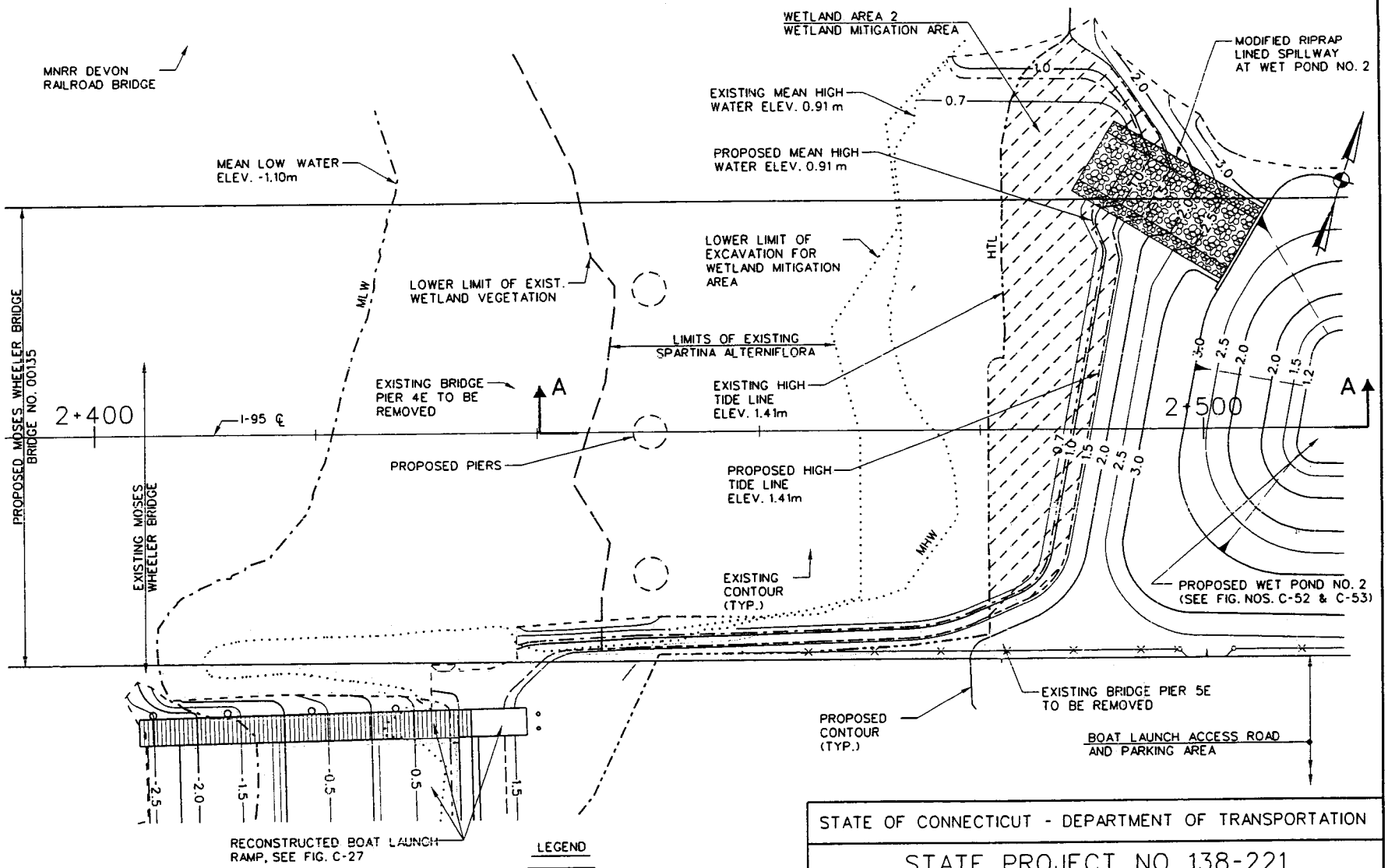
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

STRATFORD/MILFORD

REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER
PROJECT NO. 138-221

STV Incorporated
ENGINEERS AND PLANNERS
80 Ferry Boulevard
Stratford, CT 06615

DATE: 11/22/06	VEGETATION SKETCH WETLAND AREA 2	FIG. VS-2



WETLAND MITIGATION PLAN
WETLAND AREA 2

SCALE- 1:500

NOTES:

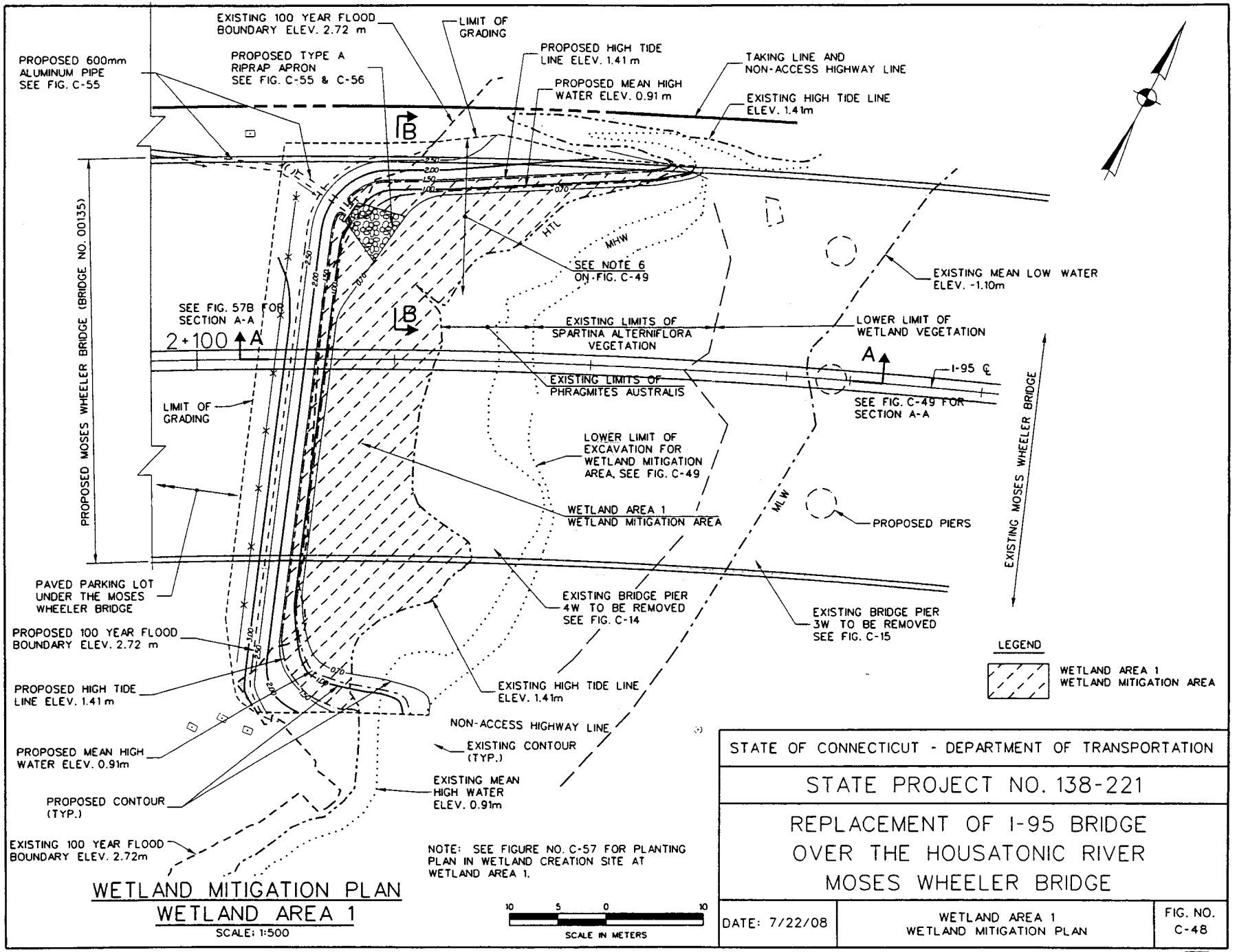
1. REFER TO FIGURE NO. C-51 FOR SECTION A-A.
2. REFER TO FIGURE NO. C-58 FOR PLANTING PLAN IN WETLAND CREATION SITE AT WETLAND AREA 2.

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

STATE PROJECT NO. 138-221

REPLACEMENT OF I-95 BRIDGE
OVER THE HOUSATONIC RIVER
MOSES WHEELER BRIDGE

DATE: 7/22/08	WETLAND AREA 2 WETLAND MITIGATION PLAN	FIG. NO. C-50



NOTE: SEE FIGURE NO. C-57 FOR PLANTING PLAN IN WETLAND CREATION SITE AT WETLAND AREA 1.

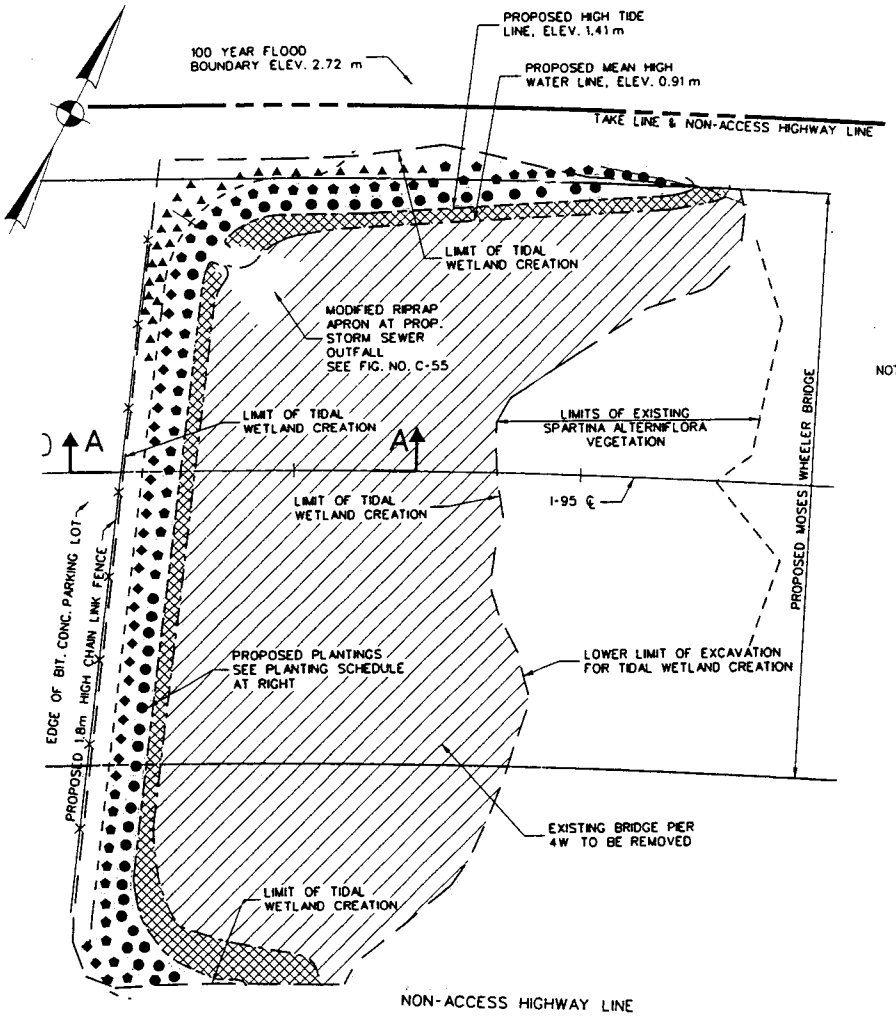
WETLAND MITIGATION PLAN
WETLAND AREA 1
SCALE: 1:500

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

STATE PROJECT NO. 138-221

REPLACEMENT OF I-95 BRIDGE OVER THE HOUSATONIC RIVER MOSES WHEELER BRIDGE

DATE: 7/22/08	WETLAND AREA 1 WETLAND MITIGATION PLAN	FIG. NO. C-48



PLANTING PLAN - WETLAND MITIGATION AREA - WETLAND AREA 1

SCALE: 1:500

10 5 0 10

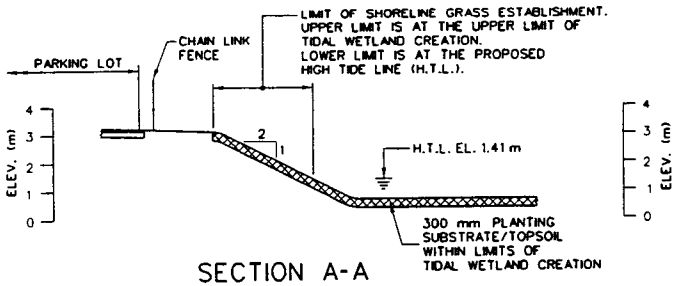
SCALE IN METERS
BAR SCALE FOR PLANTING PLAN

NOTES:
1. SEE FIGURE NOS. C-48 AND C-49 FOR GRADING OF WETLAND CREATION AREA IN WETLAND AREA 1.
2. PRIOR TO PLACING PLANTING SUBSTRATE/TOPSOIL AND INSTALLING PLANTINGS, NUISANCE VEGETATION AND INVASIVE PLANT SPECIES SHALL BE REMOVED FROM THE WETLAND CREATION SITE.
3. SEEDING FOR SHORELINE GRASS ESTABLISHMENT SHALL COMMENCE UPON COMPLETION OF GRADING AND PLACEMENT OF PLANTING SUBSTRATE/TOPSOIL. GRADING AND SEEDING MUST BE PERFORMED WITHING THE SAME CONSTRUCTION SEASON.
4. AFTER SEEDING, INSTALL A BIODEGRADEABLE TEMPORARY EROSION CONTROL BLANKET.
5. PLANTING OF HERBACEOUS STOCK AND SHRUBS WILL BE DONE IN THE SPRING BETWEEN APRIL 15 AND MAY 31.

PLANTING SCHEDULE FOR WETLAND MITIGATION AREA 1

SYMBOL	BOTANICAL NAME	COMMON NAME	TYPE	QUANTITY (EACH) WETLAND AREA 1
⬟	BACCHARIS HALIMIFOLIA	GROUNDSEL TREE	1 GALLON CONTAINER (300 - 450 mm HEIGHT)	50
●	IVA FRUTESCENS	HIGH TIDE BUSH	1 GALLON CONTAINER (300 - 450 mm HEIGHT)	50
◆	MYRICA GALE	SWEET GALE	1 GALLON CONTAINER (300 - 450 mm HEIGHT)	30
▲	HIBISCUS MOSCHEUTOS, OR H. PALUSTRIS	ROSE MALLOW	1 GALLON CONTAINER (300 - 450 mm HEIGHT)	30
▨	SPARTINA ALTERNIFLORA	SMOOTH CORDGRASS	PLUGS	1525
▩	SPARTINA PATENS	SALTMEADOW HAY	PLUGS	375

NOTES:
1. ESTABLISH SHORELINE GRASS ON THE EMBANKMENTS OF THE TIDAL WETLAND MITIGATION AREAS. THE LOWER LIMIT OF SHORELINE GRASS ESTABLISHMENT SHALL BE THE PROPOSED HIGH TIDE LINE AND THE UPPER LIMIT SHALL BE AS INDICATED ON SECTION A-A.
2. PLANT SPARTINA ALTERNIFLORA PLUGS AT 900 mm ON CENTER BETWEEN THE LOWER LIMIT OF EXCAVATION FOR THE WETLAND CREATION SITE AND THE PROPOSED MEAN HIGH WATER LINE, AND WITHIN LIMITS SHOWN HEREON.
3. PLANT SPARTINA PATENS PLUGS AT 600 mm ON CENTER BETWEEN THE PROPOSED MEAN HIGH WATER LINE (ELEV. 0.91m) AND THE PROPOSED HIGH TIDE LINE (ELEV. 1.41 m), AND WITHIN LIMITS SHOWN HEREON.



SECTION A-A

SCALE: 1:250

5 2.5 0 5

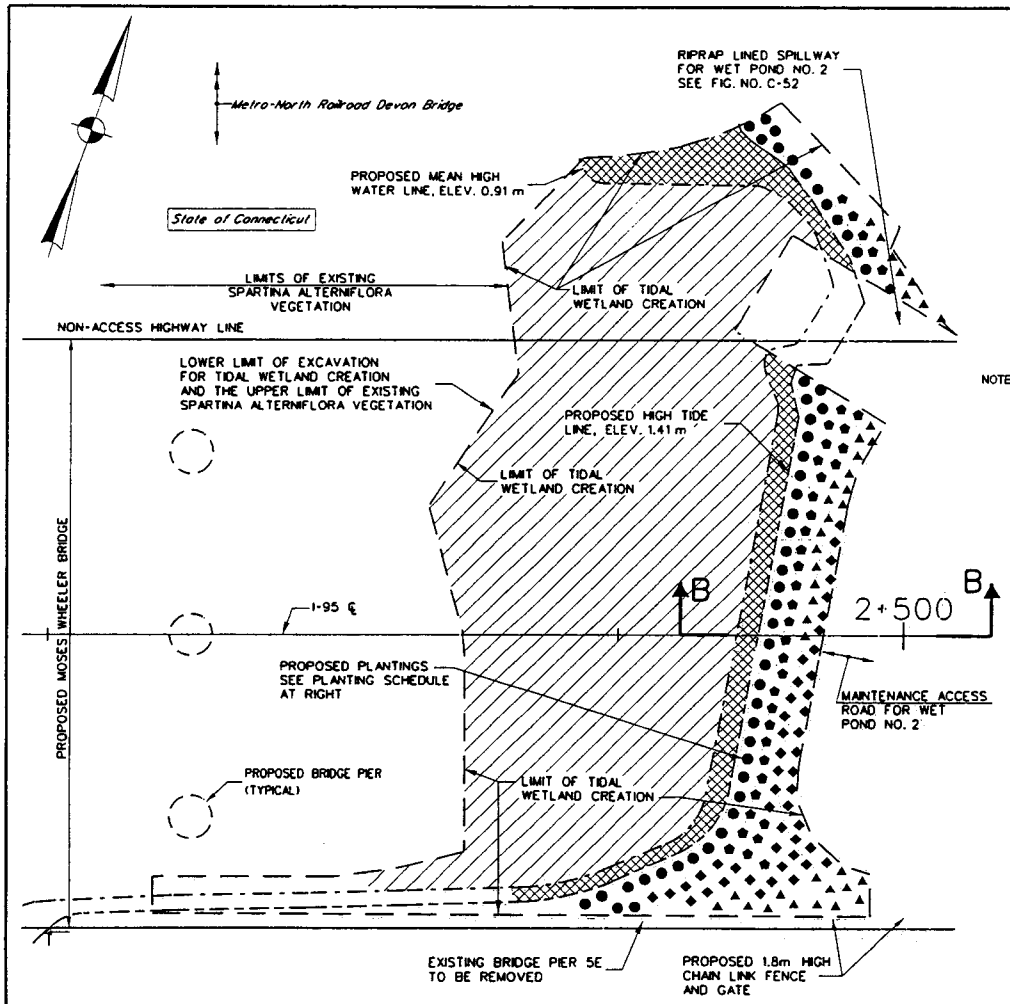
SCALE IN METERS
BAR SCALE FOR SECTION A-A

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

STATE PROJECT NO. 138-221

REPLACEMENT OF I-95 BRIDGE
OVER THE HOUSATONIC RIVER
MOSES WHEELER BRIDGE

DATE: 7/21/08	WETLAND MITIGATION PLANTING PLAN WETLAND AREA 1	FIG. NO. C-57



PLANTING PLAN - WETLAND MITIGATION AREA - WETLAND AREA 2

SCALE: 1:500

10 5 0 10

SCALE IN METERS

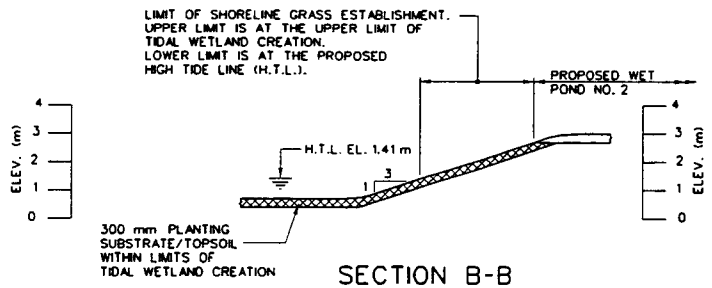
BAR SCALE FOR PLANTING PLAN

NOTES:
1. SEE FIGURE NOS. C-50 AND C-51 FOR GRADING OF WETLAND CREATION AREA IN WETLAND AREA 2.
2. PRIOR TO PLACING PLANTING SUBSTRATE/TOPSOIL AND INSTALLING PLANTINGS, NUISANCE VEGETATION AND INVASIVE PLANT SPECIES SHALL BE REMOVED FROM THE WETLAND CREATION SITE.
3. SEEDING FOR SHORELINE GRASS ESTABLISHMENT SHALL COMMENCE UPON COMPLETION OF GRADING AND PLACEMENT OF PLANTING SUBSTRATE/TOPSOIL. GRADING AND SEEDING MUST BE PERFORMED WITHING THE SAME CONSTRUCTION SEASON.
4. AFTER SEEDING, INSTALL A BIODEGRADEABLE TEMPORARY EROSION CONTROL BLANKET.
5. PLANTING OF HERBACEOUS STOCK AND SHRUBS WILL BE DONE IN THE SPRING BETWEEN APRIL 15 AND MAY 31.

PLANTING SCHEDULE FOR WETLAND MITIGATION AREA 2

SYMBOL	BOTANICAL NAME	COMMON NAME	TYPE	QUANTITY (EACH) WETLAND AREA 2
⬟	BACCHARIS HALIMIFOLIA	GROUNDSEL TREE	1 GALLON CONTAINER (300 - 450 mm HEIGHT)	40
●	IVA FRUTESCENS	HIGH TIDE BUSH	1 GALLON CONTAINER (300 - 450 mm HEIGHT)	50
◆	MYRICA GALE	SWEET GALE	1 GALLON CONTAINER (300 - 450 mm HEIGHT)	50
▲	HIBISCUS MOSCHEUTOS, OR H. PALUSTRIS	ROSE MALLOW	1 GALLON CONTAINER (300 - 450 mm HEIGHT)	40
▨	SPARTINA ALTERNIFLORA	SMOOTH CORDGRASS	PLUGS	1200
▨	SPARTINA PATENS	SALTMEADOW HAY	PLUGS	300

NOTES.
1. ESTABLISH SHORELINE GRASS ON THE EMBANKMENTS OF THE TIDAL WETLAND MITIGATION AREAS. THE LOWER LIMIT OF SHORELINE GRASS ESTABLISHMENT SHALL BE THE PROPOSED HIGH TIDE LINE AND THE UPPER LIMIT SHALL BE AS INDICATED ON SECTIONS B-B.
2. PLANT SPARTINA ALTERNIFLORA PLUGS AT 900 mm ON CENTER BETWEEN THE LOWER LIMIT OF EXCAVATION FOR THE WETLAND CREATION SITE AND THE PROPOSED MEAN HIGH WATER LINE, AND WITHIN LIMITS SHOWN HEREON.
3. PLANT SPARTINA PATENS PLUGS AT 600 mm ON CENTER BETWEEN THE PROPOSED MEAN HIGH WATER LINE (ELEV. 0.91m) AND THE PROPOSED HIGH TIDE LINE (ELEV. 1.41 m), AND WITHIN LIMITS SHOWN HEREON.



SECTION B-B

SCALE: 1:250

5 2.5 0 5

SCALE IN METERS

BAR SCALE FOR SECTION B-B

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

STATE PROJECT NO. 138-221

REPLACEMENT OF I-95 BRIDGE
OVER THE HOUSATONIC RIVER
MOSES WHEELER BRIDGE

DATE: 7/21/08	WETLAND MITIGATION PLANTING PLAN WETLAND AREA 2	FIG. NO. C-58

6. [ ] Documentation of acceptance by receiving agency (if applicable)

N/A

M. Monitoring Plan

1. [ ] Appropriate monitoring is proposed.
   The monitoring proposal is not consistent with current doctrine regarding the format and does not specify a five year monitoring period.

A monitoring period of five years has been proposed as it has been the Department's experience that tidal wetland mitigation sites do not require nearly as long to establish as inland wetland sites. Reports will be prepared and submitted for years 2 and 3. Tidal sites also do not present many of the challenges that inland sites do, as hydrology is known and the pattern of vegetation zonation can be replicated from areas immediately adjacent to the proposed site. The monitoring plan which was proposed was approved by CTDEP's Office of Long Island Sound Program staff. Given the numerous sites across the State that the Office of Environmental Planning must oversee and monitor each year, it is felt that staffing efforts are better spent on other tasks. For this particular project, the applicant respectfully requests that a five year monitoring period be considered sufficient, with the understanding that reports will be submitted for years 2 and 3. If there are any unresolved issues or problems at either site, that monitoring will continue until such issue is resolved or until the five year monitoring period is reached. Details of the proposed monitoring plan are included as Attachment M.

2. [ ] Project Overview Form will be included with each Annual Monitoring Report.

A Project Overview Form will be included with each Annual Monitoring Report.

3. [ ] Transmittal and Self-Certification Form will be included with each Annual Monitoring Report.

A Transmittal and Self-Certification Form will be included with each Annual Monitoring Report.

N. Assessment Plan

[ ] An appropriate assessment plan is proposed and language included.
No assessment strategy is disclosed

An Assessment Plan will be prepared by CTDOT or their consultant and included as part of the monitoring report for the fifth year. The Assessment Plan will include the information outlined in Attachment N.

O. Contingency

[ ] Plan for dealing with unanticipated site conditions or changes.

MONITORING

Notification of Construction Completion

Within 60 days of completing a mitigation project that includes restoration, creation, and/or enhancement, the applicant will submit a signed letter to the Corps, Policy Analysis and Technical Support Branch, specifying the date of completion of the mitigation work.

If mitigation construction is initiated in, or continues throughout the year, but is not completed by December 31 of any given year, the permittee will provide the Corps, Policy Analysis and Technical Support Branch, a letter providing the date mitigation work began and the work completed as of December 31. The letter will be sent no later than January 31 of the next year. The letter will include the Corps permit number.

Monitoring Report Guidance

For each of the first **five** full growing seasons following construction of the mitigation site(s), the site(s) will be monitored and annual monitoring reports submitted **for growing years 2 and 3**. Observations will occur at least two times during the growing season – in late spring/early summer and again in late summer/early fall. Each monitoring report will be submitted to the Corps, Regulatory Division, Policy Analysis and Technical Support Branch, no later than December 15 of the year being monitored. Failure to perform the monitoring and submit monitoring reports constitutes permit non-compliance. **A self-certification form[1] will be completed, and signed as the transmittal coversheet for each annual monitoring report and will indicate the permit number and the report number (Monitoring Report 1 of 5, for example)**. The reports will address the following success-standards in the summary data section and will address the additional items noted in the monitoring report requirements, in the appropriate section. The reports will also include the monitoring-report appendices listed below. The first year of monitoring will be the first year that the site has been through a full growing season after completion of construction and planting. For these special conditions, a growing season starts no later than May 31. However, if there are problems that need to be addressed and if the measures to correct them require prior approval from the Corps, the permittee will contact the Corps by phone (1-800-362-4367 in MA or 1-800-343-4789 in ME, VT, NH, CT, RI) or letter as soon as the need for corrective action is discovered.

---

[1] See Attachment 2

Remedial measures will be implemented - at least two years prior to the completion of the monitoring period - to attain the success standards described below within **two** growing seasons after completion of construction of the mitigation site(s). Should measures be required within two years of the end of the monitoring period, the monitoring period will be extended to ensure two years of monitoring after the remedial work is completed. Measures requiring earth movement or changes in hydrology will not be implemented without written approval from the Corps.

At least one reference site adjacent to or near each mitigation site will be described and shown on a locus map.

Success Standards

1) The site has the hydrology, as demonstrated with well data collected at least weekly from March through June or other substantial evidence, to support the designed wetland type.

Is the proposed hydrology met at the site?
What percentage of the site is meeting projected hydrology levels?
Areas that are too wet or too dry should be identified along with suggested corrective measures.

2) The proposed vegetation diversity and/or density goals for woody plants from the plan are met.

Unless otherwise specified in the mitigation plans, this should be at least 500 trees and shrubs per acre, of which at least 350 per acre are trees for proposed forested cover types, that are healthy and vigorous and are at least 18" tall in 75% of each planned woody zone AND at least the following number of non-exotic species including planted and volunteer species. Volunteer species should support functions consistent with the design goals. To count a species, it should be well represented on the site (e.g., at least 50 individuals of that species per acre).

# species planted	minimum # species required (volunteer and planted)
2	2
3	3
4	3
5	4
6	4
7	5

8	5
9 or more	6

Vegetative zones consist of areas proposed for various types of wetlands (shrub swamp, forested swamp, etc.). The performance standards for density can be assessed using either total inventory or quadrat sampling methods, depending upon the size and complexity of the site.

3) a. Each mitigation site has at least 80% areal cover, excluding planned open water areas or planned bare soil areas (such as for turtle nesting), by noninvasive species (See Table 4).
b. Planned emergent areas on each mitigation site have at least 80% cover by noninvasive hydrophytes.
c. Planned scrub-shrub and forested cover types have at least 60% cover by noninvasive hydrophytes, of which at least 15% are woody species.

For the purpose of this success standard, invasive species of hydrophytes are:

Cattails -- *Typha latifolia, Typha angustifolia, Typha glauca*;
Common Reed -- *Phragmites australis*;
Purple Loosestrife -- *Lythrum salicaria*;
Reed Canary Grass -- *Phalaris arundinacea*; and
Buckthorn – *Rhamnus frangula.*

4) Common reed (*Phragmites australis*), Purple loosestrife *(Lythrum salicaria*), Russian and Autumn olive (*Elaeagnus* spp.), Buckthorn (*Rhamnus* spp.), Japanese knotweed (*Polygonum cuspidatum*), and/or Multiflora rose (*Rosa multiflora*) plants at the mitigation site(s) are being controlled.

For this standard, small patches must be eliminated during the entire monitoring period. Large patches must be aggressively treated and the treatment documented.

5) All **slopes, soils, substrates, and constructed features within and adjacent to the mitigation site(s)** are stable.

Monitoring Report Requirements

Additional items for inclusion:

Project Overview

- Highlighted summary of problems which need immediate attention (e.g., problem with hydrology, severe invasives problem, serious erosion, major losses from herbivory, etc.). This should be at the beginning of the report and highlighted in the project overview and in the self-certification form.

Requirements

- A copy of this permit's mitigation special conditions and summary of the mitigation goals.

Summary Data

- Address success standards achievement and/or measures to attain the standards.

- Describe the monitoring inspections, and provide their dates, that occurred since the last report.

- Soils data, commensurate with the requirements of the soils portion of the 1987 Corps Wetlands Delineation Manual (Technical Report Y-87-1 and approved regional supplements) New England District data form, should be collected after construction and every alternate year throughout the monitoring period. If monitoring wells or gauges were installed as part of the project, this hydrology data should be submitted annually.

- Concisely describe remedial actions done during the monitoring year to meet the five success standards – actions such as removing debris, replanting, controlling invasive plant species (with biological, herbicidal, or mechanical methods), regrading the site, applying additional topsoil or soil amendments, adjusting site hydrology, etc. Also describe any other remedial actions done at each site.

- Report the status of all erosion control measures on the compensation site(s). Are they in place and functioning? If temporary measures are no longer needed, have they been removed?

- Give visual estimates of (1) percent vegetative cover for each mitigation site and (2) percent cover of the invasive species

listed under Success Standard No. 3, above, in each mitigation site.

- What fish and wildlife use the site(s) and what do they use it for (nesting, feeding, shelter, etc.)?

- By species planted, describe the general health and vigor of the surviving plants, the prognosis for their future survival, and a diagnosis of the cause(s) of morbidity or mortality.

Conclusions

- What remedial measures are recommended to achieve or maintain achievement of the five success standards and otherwise improve the extent to which the mitigation site(s) replace the functions and values lost because of project impacts?

Monitoring Report Appendices

Appendix A -- An as-built plan showing topography to 1-foot contours, any inlet/outlet structures and the location and extent of the designed plant community types (e.g., shrub swamp). Within each community type the plan shall show the species planted—but it is not necessary to illustrate the precise location of each individual plant. There should also be a soil profile description and the actual measured organic content of the topsoil. This should be included in the first monitoring report unless there are grading or soil modifications or additional plantings of different species in subsequent years.

Appendix B – A vegetative species list of volunteers in each plant community type. The volunteer species list should, at a minimum, include those that cover at least 5% of their vegetative layer.

Appendix C -- Representative photos of each mitigation site taken from the same locations for each monitoring event. Photos should be dated and clearly labelled with the direction from which the photo was taken. The photo sites must also be identified on the appropriate maps.

Attachment N

Revised 8/22/08

ASSESSMENT PLAN

A post-construction assessment of the condition of the mitigation site(s) shall be performed following the **fifth** growing season after completion of the mitigation site(s) construction, or by the end of the monitoring period, whichever is later. "Growing season" in this context begins no later than May 31st. To ensure objectivity, the person(s) who prepared the annual monitoring reports shall not perform this assessment without written approval from the Corps. The assessment report shall be submitted to the Corps by December 15 of the year the assessment is conducted; this will coincide with the year of the final monitoring report, so it is acceptable to include both the final monitoring report and assessment in the same document.

The post-construction assessment shall include the four assessment appendices listed below and shall:

- Summarize the original or modified mitigation goals and discuss the level of attainment of these goals at each mitigation site.
- Describe significant problems and solutions during construction and maintenance (monitoring) of the mitigation site(s).
- Identify agency procedures or policies that encumbered implementation of the mitigation plan. Specifically note procedures or policies that contributed to less success or less effectiveness than anticipated in the mitigation plan.
- Recommend measures to improve the efficiency, reduce the cost, or improve the effectiveness of similar projects in the future.

ASSESSMENT APPENDICES:

Appendix A -- Summary of the results of a functions and values assessment of the mitigation site(s), using the same methodology used to determine the functions and values of the impacted wetlands.

Appendix B -- Calculation of the area of wetlands in each mitigation site using the 1987 Corps Wetlands Delineation Manual and approved regional supplements. Supporting documents shall include (1) a scaled drawing showing the wetland boundaries and representative transects and (2) datasheets for corresponding data points along each transect.

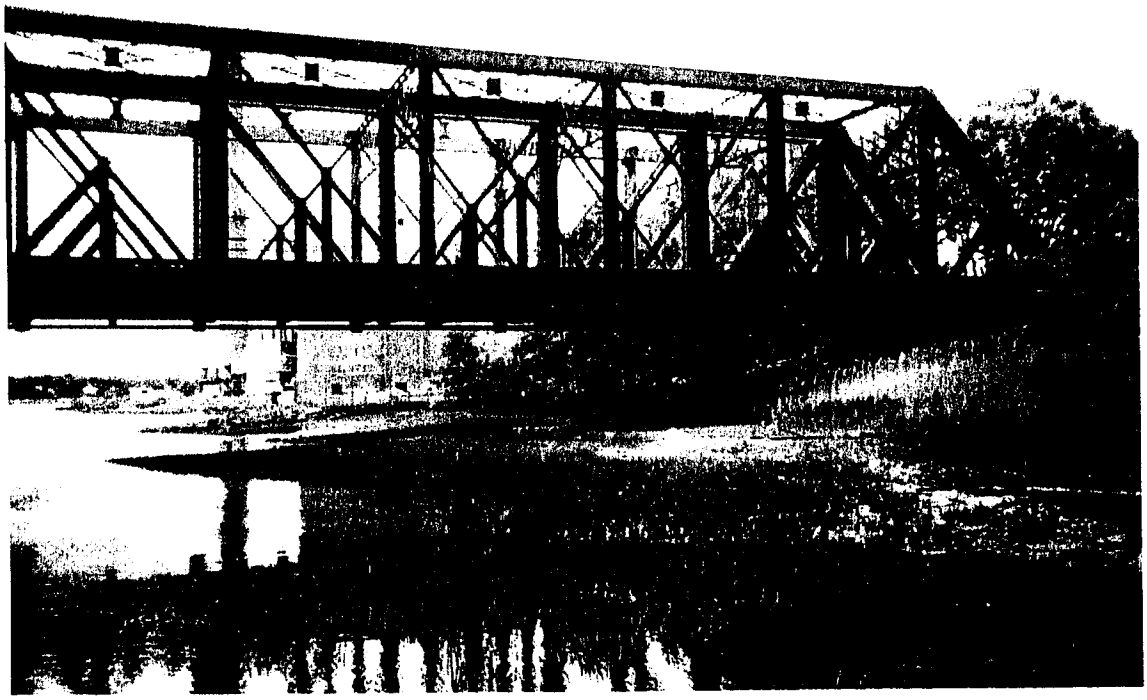
Appendix C -- Comparison of the area and extent of delineated constructed wetlands (from Appendix B) with the area and extent of created wetlands proposed in the mitigation plan. This comparison shall be made on a scaled drawing or as an overlay on the as-built plan. This plan shall also show the major vegetation community types.

Appendix D -- Photos of each mitigation site taken from the same locations as the monitoring photos, including photos of vernal pools, if applicable.

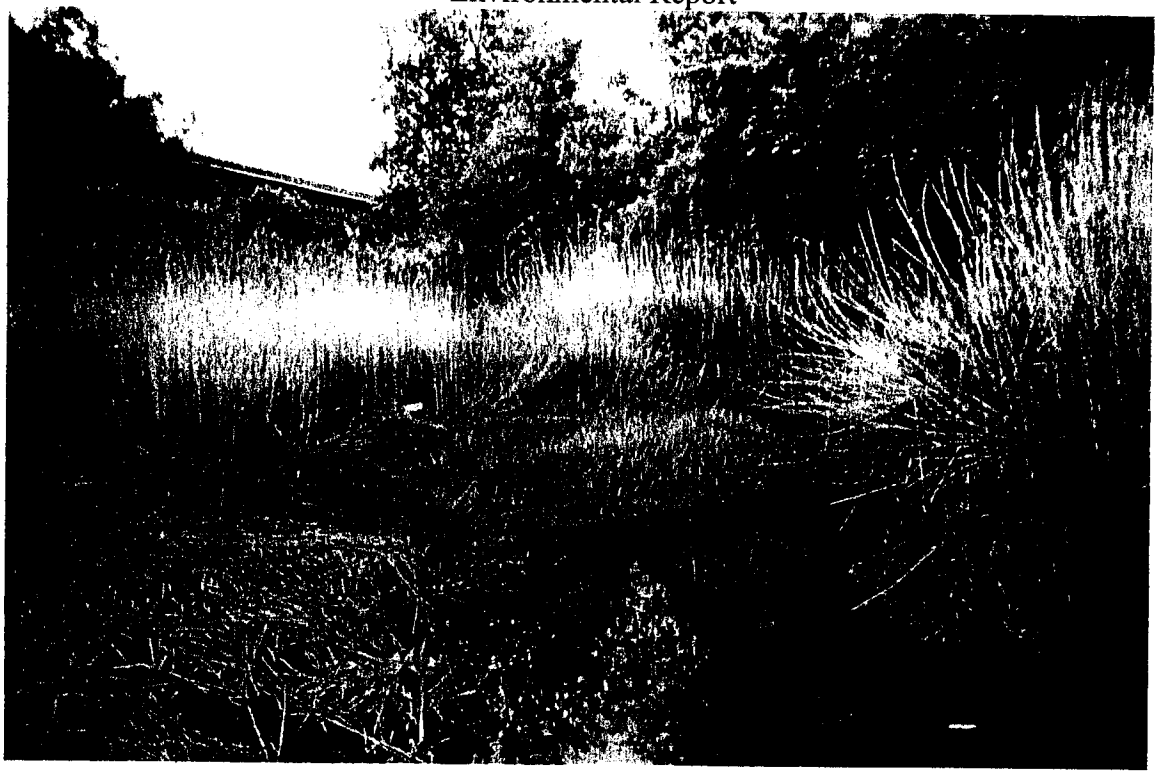
Photograph 11 - Wetland Area 1, Wetlands Along the Housatonic River (Stratford Side) Area at the Proposed Drainage System C Outfall location.

Photograph 12 - Wetland Area 2, Wetlands Along the Housatonic River (Milford Side) Looking Northwest at the boat launch, Moses Wheeler Bridge, and the Devon (railroad) bridge.

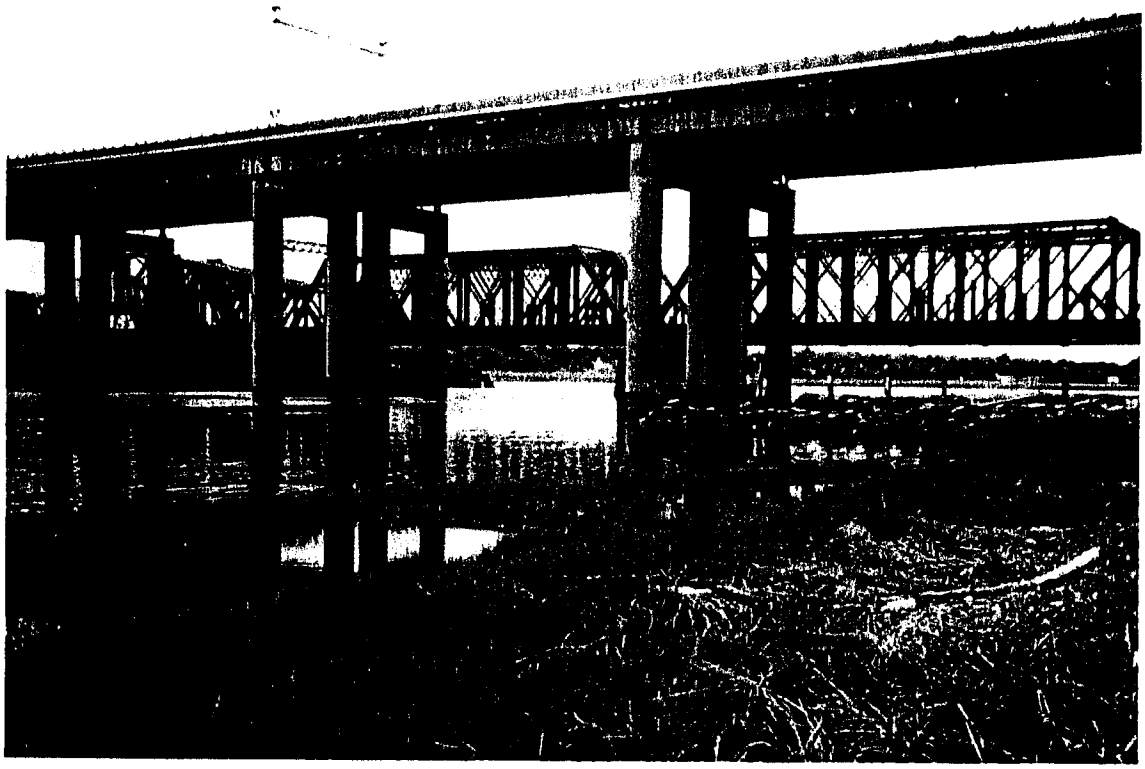
Photograph 13 - Wetland Area 2, Wetlands Along the Housatonic River (Milford Side) Looking Northeast at the wetland vegetation beneath the Moses Wheeler Bridge and adjacent to the Devon bridge.



Photograph 14 - Wetland Area 2, Wetlands Along the Housatonic River (Milford Side) Looking North at the wetland vegetation.



Photograph 15 - Wetland Area 2, Wetlands Along the Housatonic River (Milford Side)
Looking east at Phragmites along the outlet feeding into the Housatonic River



Photograph 16 - Wetland Area 2, Wetlands Along the Housatonic River (Milford Side)
Looking northwest at the Moses Wheeler Bridge and Devon bridge crossing the Housatonic River.

Photograph 17 - Wetland Area 2, Wetlands Along the Housatonic River (Milford Side)

Looking Southwest at the Housatonic River from fringe of the wetland.

Photograph 18 - Wetland Area 2, Wetlands Along the Housatonic River (Milford Side)

Looking South at the wetland vegetation along the Housatonic River.

Photograph 19 - Wetland Area 3, Wetland South of the Public Boat Ramp Access Road
Looking South at the vegetation along the paved road to the boat launch.

Photograph 20 - Wetland Area 3, Wetland South of the Public Boat Ramp Access Road
Looking southeast at the vegetation along the paved road to the boat launch.

Photograph 21 - Wetland Area 3, Wetland South of the Public Boat Ramp Access Road

Looking west at the wetland fed by the outlet flowing towards the Housatonic River.

Photograph 22 - Wetland Area 3, Wetland South of the Public Boat Ramp Access Road

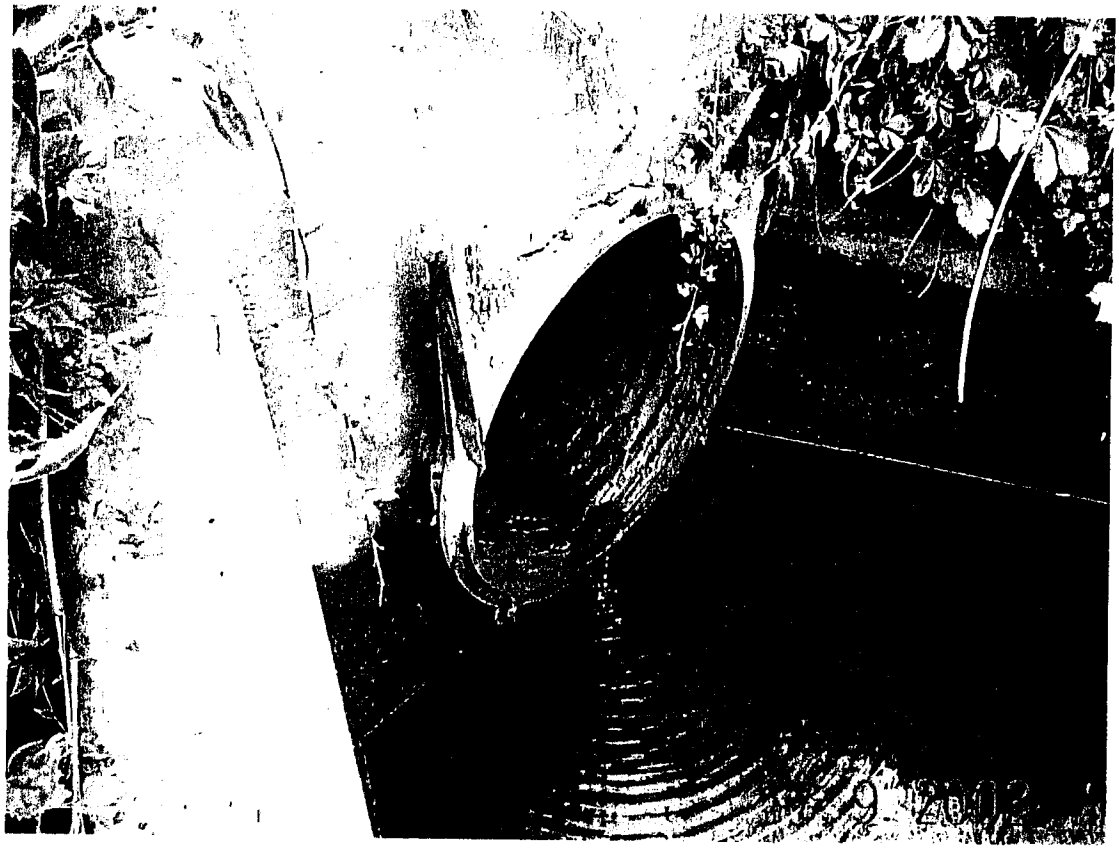
Looking East at the outlet flowing to the Housatonic River.

Photograph 23 - Wetland Area 3, Wetland South of the Public Boat Ramp Access Road
Looking west at the existing storm drainage system outlet headwall and concrete lined channel.

Photograph 24 - Wetland Area 3, Wetland South of the Public Boat Ramp Access Road
Looking East just downstream of the concrete lined channel.

Photograph 25 - Wetland Area 4, Orchard Street Drainage Outlet

Looking south at the Housatonic River and wetland vegetation at the end of Orchard Street.



Photograph 26 - Wetland Area 4, Orchard Street Drainage Outlet

The existing storm drain system outlet structure.

Photograph 27 - Wetland Area 5, Ferry Creek

Looking West from the culvert.

Photograph 28 - Wetland Area 5, Ferry Creek

Looking West along Ferry Creek

Photograph 29 - Wetland Area 5, Ferry Creek

Debris found in Ferry Creek

Photograph 30 - Wetland Area 5, Ferry Creek

Culvert discharging into the Ferry Creek at Eastern end.

Photograph 31 - Wetland Area 6, Unnamed Wetland at Station 3+120

Looking South at the wetland fed by a drainage culvert

Attachment Cg.

Connecticut Commission on Culture & Tourism

Historic Preservation & Museum Division

59 South Prospect Street
Hartford, Connecticut
06106

(v) 860.566.3005
(f) 860.566.5078

November 9, 2006

Mr. Richard B. Armstrong
Consultant Design
ConnDOT
2800 Berlin Turnpike
Newington, CT

Subject: I-95 Moses Wheeler Bridge
Milford and Stratford, CT
ConnDOT #138-221

Dear Mr. Armstrong:

The State Historic Preservation Office has reviewed supplemental information provided by ConnDOT concerning the above-named project. This office expects that the proposed undertaking will have no effect on historic, architectural, or archaeological resources listed on or eligible for the National Register of Historic Places.

This office appreciates the opportunity to have reviewed and commented upon the proposed undertaking.

This comment is provided in accordance with the National Historic Preservation Act and the Connecticut Environmental Policy Act.

This comment updates and supersedes all previous correspondence regarding the proposed bridge replacement.

For further information please contact Dr. David A. Poirier, Staff Archaeologist.

Sincerely,

J. Paul Loether
Division Director and Deputy
State Historic Preservation Officer

cc: Ms. Cynthia Holden/ConnDOT

KTH

ITEM #0948013A – TIDAL WETLAND CREATION

Description:

The work shall consist of the construction of Tidal Wetland Mitigation Areas at the sites identified on the Tidal Wetland Mitigation Plans. The work generally consists of preparing appropriate site grades as directed by the Engineer within the mitigation area.

Materials:

Planting Substrate and Topsoil: Natural or manmade planting substrate or topsoil may be used, which shall consist of soils containing ***no less than*** 75% sand by weight and an organic content no less than 10% and no more than 15%. The soil must be analyzed by USDA-approved methodology for organic matter by loss-on-ignition of oven-dried samples dried at 105 degrees centigrade. The mineral fraction must be analyzed to determine weight percentage of sand, as determined after passing a 2-millimeter (mm) sieve. Sand particles are defined to be between 0.05 and 2.0 mm in diameter. The topsoil must be free of seeds and roots of invasive species and inspected and approved by the Connecticut Department of Transportation Office of Environmental Planning (CT DOT OEP) prior to its application.

Topsoil not furnished by the Contractor shall be natural topsoil material from areas free of invasive species stripped from earth excavation areas within the project limits if it meets the criteria described above. If these soils do not meet the criteria, additional make-up material from off-site areas may be substituted or mixed with the on-site project material provided the resultant soil composition meets the applicable criteria. Clean leaf compost is the preferred soil amendment to achieve these criteria. If other soil amendments are more readily available than clean leaf compost they can be used to meet the requirement for organic content.

If soil must be supplemented with organic material, the following sources are acceptable:

a) **Natural Wetland Soil:** The top layer of natural wetland soil excavated from within the project limits or from another wetland source. The bottom of this layer shall be defined as the depth at which the soil color and texture changes, indication the beginning of the subsoil. Each source must be inspected at least 6 months prior to excavation and determined by the CT DOT OEP to be free from seeds and roots of invasive species.

b) **Compost:** Compost shall meet the requirements of **Subarticle M.13.06 – Compost.**

c) **Peat:** Peat shall meet the requirements of **Subarticle M.13.07 – 13 – Peat.** Peat material excavated from the project site may be substituted for commercially packaged peat, at the discretion of the Engineer, if the on-site peat meets all the requirements of the specification.

Construction Methods:

A wetland scientist from the CT DOT OEP will be on-site to monitor construction of the Wetland Mitigation Areas to ensure compliance with the mitigation plan.

The Contractor shall submit a construction schedule and an outline of construction methodologies for the required earthwork of the wetland creation site according to the general construction sequence and requirements outlined below to CT DOT OEP for approval. The Contractor must schedule wetland creation activities to begin as soon as completion of structural work and access allows. The grading and seeding must be performed within the same construction season, with no scheduled inactive period of more than 10 workdays. The grading and seeding shall be scheduled so that seeding and planting will occur within an approved planting season. Grading shall be completed during and near times of low tide only.

During the performance of this work, a CT DOT Environmental Inspector from the CT DOT OEP will be available to visit the site to direct the construction activities involved in constructing the wetland creation sites. The Contractor shall arrange through the engineer at least 10 days prior to the commencement of these activities to ensure that the Environmental Inspector is available. The CT DOT OEP reserves the option to reconfigure the mitigation site Grading and Planting Plans to ensure mitigation site success.

(a) Identify temporary stockpile and staging locations.

(b) Verify and delineate established work limits in the field.

(c) Meet with the CT DOT OEP Environmental Inspector in the field.

(d) Remove nuisance vegetation and all invasive plant species identified in the NOTICE TO CONTRACTOR – INVASIVE PLANT SPECIES from the site and as directed by OEP staff. Invasive species removal must be done utilizing a method appropriate for that species and season.

(e) Install temporary sedimentation and erosion control measures.

(f) Identify, clear, grade, and stabilize any required haul road(s) if necessary. Construct haul roads in a manner that minimizes disturbance to existing vegetation. No additional impacts may occur to the existing tidal wetland vegetation other than already depicted on the plans as a result of access.

(g) Wood debris and other bulky debris and rubbish shall be cleared from the wetland creation area.

(h) Excavate mitigation site to a depth of at least 0.8 meters below proposed finished grade, following sequence and methods noted on the Grading Plan and as directed by an

Environmental Inspector from the CTDOT OEP. Excavation shall be to a depth to remove all roots of Phragmites as directed by OEP.

(i) Prior to placing planting substrate, obtain site-specific tidal data at the mitigation site in order to establish appropriate elevations for final grading and set reference stakes as requested by OEP staff.

1. Obtain (survey) elevation of existing Spartina vegetation and stake in field

(j) Place tested and approved Planting Substrate and Topsoil over approved subgrade in the locations and to the final grades shown on the Grading Plan, in a manner consistent with specification of the Grading Plan and as directed by an Environmental Inspector from the CTDOT OEP. Substrate shall be placed in a manner to avoid compaction of soil.

(k) Initiate and complete seeding consistent with specification of the Planting Plan.

(l) Prior to planting, obtain site-specific tidal data at the mitigation site in order to establish appropriate elevations for tidal wetland plantings.

1. Obtain (survey) High Tide Line and stake in field

(m)The CT DOT OEP shall inspect and approve the mitigation site prior to planting. During the performance of this work, a CT DOT Environmental Inspector from the CT DOT OEP will be available to visit the site to direct the planting within the wetland creation sites. The Contractor shall arrange through the engineer at least 10 days prior to the commencement of these activities to ensure that the Environmental Inspector is available.

(n) Initiate and complete planting in an approved planting season, per specification of the Planting Plan.

(o) Remove temporary sedimentation and erosion control measures. Temporary devices and structures to control erosion and sedimentation in and around the Tidal Wetland Mitigation Area shall be disassembled and properly disposed of. Sediment collected by these devices shall be removed and placed upland in a manner that prevents its erosion and transport to a waterway or wetland, in accordance with Section 1.10, including Best Management Practices.

(p) Restore stockpiling and staging site(s) and access/haul roads to the mitigation site.

(q) Clear the mitigation site of debris, rubbish, garbage, and other manmade litter.

(r) Provide as-built plans of the mitigation sites to CT DOT OEP.

Method of Measurement:

Tidal Wetland Creation will be measured for payment by the number of square meters of Tidal Wetland Mitigation Area re-graded, covered with planting substrate/topsoil, and accepted.

Basis of Payment:

The work will be paid for at the contract unit price per square meter for "Tidal Wetland Creation" within the Tidal Wetland Mitigation Areas, complete in place, including all materials, equipment, maintenance, tools, labor, and work incidental thereto.

The price shall also include: removing invasive plant species; hauling and disposing of excess topsoil; forming subgrade within the Tidal Wetland Mitigation Areas; testing, mixing, and providing planting substrate and topsoil; placing planting substrate and topsoil; restoring stockpiling and staging site(s) and haul roads; removing and disposing of debris, garbage and litter; and forming subgrade within the Wetland Mitigation Areas.

The cost of installing and removing sedimentation and erosion controls, including Sedimentation Control Systems, shall be paid for under their respective contract items.

The cost of all excavation will be paid under the contract item, "Earth Excavation".

The cost of all plantings will be paid under the contract item, "Furnishing, Planting and Mulching Trees, Shrubs, Vines and Ground Cover Plants".

Pay Item	Pay Unit
Tidal Wetland Creation	S.M.

NOTICE TO CONTRACTOR – INVASIVE PLANT SPECIES

Invasive Plant Species Not Permitted In the Wetland Mitigation Area: Only plant materials native and indigenous to the region shall be used within the Wetland Mitigation Areas. Species not specified in the Mitigation Plan shall not be used without written approval from the Connecticut Department of Transportation Office of Environmental Planning (CT DOT OEP). Plant species on the following list shall not be used in and within 100 feet of the Mitigation Sites.

a. Herbs:

Aegopodium podagraria	Goutweed or Bishop's weed
Aira caryophyllea	Silver hairgrass
Alliaria petiolata	Garlic mustard
Allium vineale	Field garlic
Ampelopsis brevipedunculata	Porcelain berry
Anthoxanthum odoratum	Sweet vernal grass
Anthriscus sylvestris	Chervil
Arctium minus	Common burdock
Asparagus officinalis	Asparagus
Barbarea vulgaris	Yellow rocket
Bromus tectorum	Drooping brome-grass
Butomus umbellatus	Flowering rush
Cabomba caroliniana	Fanwort
Callitriche stagnalis	Water-starwort
Calystegia sepium	Japanese bindweed
Cardamine impatiens	Bushy rock-cress
Cardamine pratensis	Cuckoo-flower
Carex kobomugi	Japanese sedge
Centaurea biebersteinii	Spotted knapweed
Chelidonium majus	Celandine
Cirsium arvense	Canada-thistle
Cirsium palustre	Marsh thistle
Commelina communis	Asiatic day-flower
Coronilla varia	Crown vetch
Cyperus esculentus	Yellow nutsedge
Dactylis glomerata	Orchard-grass
Datura stramonium	Jimsonweed
Echinochloa crusgalli	Barnyard grass
Egeria densa	Giant waterweed
Eichhornia crassipes	Water hyacinth
Eleusine indica	Goosegrass
Elsholtzia ciliata	Elsholtzia
Elytrigia repens	Quack-grass
Epilobium hirsutum	Hairy willow-herb

Euphorbia cyparissias	Cypress spurge
Euphorbia esula	Leafy spurge
Festuca filiformia	Hair fescue
Festuca ovina	Sheep fescue
Froelichia gracilis	Slender snake cotton
Geranium nepalense (G. sibericum)	Nepalese crane's-bill
Geranium thunbergii	Thunberg's geranium
Glaucium flavum	Sea- or horned poppy
Glechoma hederacea	Gill-over-the-ground
Glyceria maxima	Sweet reedgrass
Hemerocallis fulva	Tiger-lily
Heracleum mantegazzianum	Giant hogweed
Hesperis matronalis	Dame's rocket
Hydrilla verticillata	Hydrilla
Hydrocharis morsus-ranae	European frog-bit
Hylotelephium telephium (*Sedum telephium*)	Live-forever or Orpine
Hypericum perforatum	St. John's wort
Impatiens glandulifera	Ornamental jewelweed
Iris pseudacorus	Yellow iris
Kochia scoparia	Summer cypress
Lamium spp. (all)	Dead nettle
Lepidium latifolium	Tall pepperwort
Lotus corniculatus	Birdsfoot trefoil
Lysimachia nummularia	Moneywort
Lysimachia vulgaris	Garden loosestrife
Lythrum salicaria	Purple loosestrife
Malva neglecta	Cheeses or common malva
Marsilea quadrifolia	Water shamrock or Eu. water clover
Mentha arvensis	Field-mint
Microstegium vimineum	Japanese stilt-grass
Miscanthus sinensis	Eulalia
Myosotis scorpioides	True forget-me-not
Myosoton aquaticum	Giant chickweed
Myriophyllum aquaticum	Parrot feather
Myriophyllum heterophyllum	Variable water-milfoil
Myriophyllum spicatum	Eurasian water-milfoil
Najas minor	Lesser naiad
Nymphoides peltata	Yellow floating heart
Ornithogalum umbellatum	Star of Bethlehem
Pastinaca sativa	Wild parsnip
Phalaris arundinacea	Reed canary-grass
Phragmites australis	Reed grass, Phragmites
Poa compressa	Canada bluegrass
Poa pratensis	Kentucky bluegrass
Poa trivialis	Rough bluegrass

Polygonum aubertii	Silver lace-vine
Polygonum cespitosum	Cespitose knotweed
Polygonum cuspidatum	Japanese knotweed
Polygonum perfoliatum	Mile-a-minute vine
Polygonum persicaria	Lady's thumb
Polygonum sachalinense	Giant knotweed
Potamogeton crispus	Curly pondweed
Puccinellia maritima	Seaside alkali-grass
Pueraria montana	Kudzu
Ranunculus ficaria	Lesser celandine
Ranunculus repens	Creeping buttercup
Rorippa microphylla	One-row yellow cress
Rorippa nasturtium-aquaticum	Watercress
Rorippa sylvestris	Creeping yellow cress
Rumex acetosella	Sheep-sorrel
Rumex obtusifolius	Bitter dock
Salvinia molesta	Salvinia
Senecio jacobaea	Tansy ragwort
Setaria pumila (S.lutescens, S. glauca)	Yellow foxtail or y. bristlegrass
Silphium perfoliatum	Cup plant
Solanum dulcamara	Bittersweet nightshade
Stellaria graminea	Common stitchwort
Tanacetum vulgare	Tansy
Thymus pulegioides	Wild thyme
Trapa natans	Water-chestnut
Tussilago farfara	Coltsfoot
Typha latifolia[1]	Common or Broad-leaved cattail
Typha angustifolia[4]	Narrow-leaved cattail
Valeriana officinalis	Garden heliotrope
Verbascum thapsus	Common mullein
Veronica beccabunga	European speedwell
Vincetoxicum rossicum (V. nigrum)	Black swallow-wort
Xanthium strumarium	Common cocklebur

b. Woody Plants:

Acer ginnala	Amur maple
Acer platanoides	Norway maple
Acer pseudoplatanus	Sycamore maple
Actinidia arguta	Kiwi vine

[1] *Typha* spp. are native species which provide good water quality renovation and other functions/values. However, they are aggressive colonizers which, given the opportunity, will preclude establishment of other native species. They are included in this list as species not to be planted, not because they are undesirable in an established wetland, but to provide opportunities for other species to become established. It is likely they will eventually move in without human assistance.

Ailanthus altissima	Tree-of-heaven
Alnus glutinosa	European alder
Berberis thunbergii	Japanese barberry
Berberis vulgaris	Common barberry
Catalpa speciosa	Western catalpa
Celastrus orbiculatus	Oriental bittersweet
Cynanchum louiseae	Black swallow-wort
Cytisis scoparius	Scotch broom
Elaeagnus angustifolia	Russian olive
Elaeagnus umbellata	Autumn olive
Euonymus alata	Winged euonymus
Euonymus fortunei	Climbingeuonymus
Humulus japonicus	Japanese hops
Hypericum prolificum	Shrubby St. John's wort
Ligustrum obtusifolium	Japanese privet
Ligustrum vulgare	Common/hedge privet
Lonicera japonica	Japanese honeysuckle
Lonicera maackii	Amur honeysuckle
Lonicera morrowii	Morrow's honeysuckle
Lonicera tartarica	Tatarian honeysuckle
Lonicera x bella	Morrow's X Tatarian honeysuckle
Lonicera xylosteum	European fly-honeysuckle
Morus alba	White mulberry
Paulownia tomentosa	Princess tree or empress tree
Phellodendron japonicum	Corktree
Populus alba	Silver poplar
Rhamnus cathartica	Common buckthorn
Rhamnus frangula	European buckthorn
Ribes sativum	Garden red currant
Robinia pseudoacacia	Black locust
Rosa multiflora	Multiflora rose
Rosa rugosa	Rugosa rose
Rubus phoenicolasius	Wineberry
Salix purpurea[2]	Basket or purple-osier willow
Sorbus aucuparia	European mountain-ash
Taxus cuspidata	Japanese yew
Ulmus pumila	Siberian elm
Wisteria floribunda	Wisteria

[2] This is not appropriate for use in wetland mitigation. In some circumstances it may be appropriate in stream bank stabilization.

ITEM #0950202A – SHORELINE GRASS ESTABLISHMENT

Description:

The work included shall consist of providing an accepted stand of established shoreline grasses by furnishing and placing seed as shown on the mitigation plans or as directed by the Engineer within the Tidal Wetland Mitigation Area. Seeding shall be applied to all non-inundated constructed mitigation areas.

Materials:

The materials for this work shall conform to the requirements of Article 9.50.02.

Construction Methods

Construction methods shall be those established as agronomically acceptable and feasible and which are approved by the Engineer.

Shoreline Grass Mix

In order to preserve and enhance the diversity of native species, it is necessary that the source for seed mixtures for use in mitigation areas shall be located within the Northeast USA including New England, New York, Pennsylvania, New Jersey, Delaware, or Maryland. The appropriate Shoreline Grass Mix for the Coastal Shoreline Planting Zone of the Tidal Wetland Mitigation Area is detailed. Other proposed mixtures must be approved by the CT DOT OEP prior to use.

Rate shall be 50 lbs./acre (broadcast).

Scientific Name	Common Name	% of Seed Mix
Festuca rubra	Creeping Red Fescue	30
Panicum virgatum	Shelter Switchgrass	30
Andropogon gerardi	Big Bluestem	20
Sorghastrum nutans	Indiangrass	12
Panicum clandestinum	Deertounge	8

Method of Measurement:

Shoreline grass establishment will be measured for payment by the number of square meters of surface area of accepted established shoreline grasses.

Basis of Payment:

The work will be paid for at the contract unit price per square meter for "Shoreline Grass Establishment", which price shall include all materials, equipment, maintenance, tools, labor, and work incidental thereto. Partial payment of up to 60% may be made for work completed but not accepted.

Pay Item	Pay Unit
Shoreline Grass Establishment	S.M.

ITEM #0949029A – FURNISHING, PLANTING AND MULCHING TREES, SHRUBS, VINES AND GROUND COVER PLANTS

Description:

The work shall consist of furnishing and planting shrub plantings of the type and size as indicated on the planting schedule and planting plan for the Tidal Wetland Mitigation Area(s).

Materials:

The shrubs to be planted within the Tidal Wetland Mitigation Area shall be as listed in the Planting Schedule of the Mitigation Planting Plan. A member of the Connecticut Department of Transportation Office of Environmental Planning (CT DOT OEP) must approve any species substitutions from the planting plan.

Whenever possible, plants should be salvaged from wetlands and uplands cleared by the project. In some circumstances, local "scavenging" of wetlands may be permitable, but care is necessary to avoid jeopardizing established natural habitats or to unintentionally transplant invasive species. A member of the Connecticut Department of Transportation Office of Environmental Planning (CT DOT OEP) must oversee any salvaging of plants from cleared areas.

(1) Tidal Wetland Plant Sources: In order to preserve and enhance the diversity of native tidal wetland species, it is necessary that the source for plants for use in mitigation areas shall be located within the Northeast USA including New England, New York, Pennsylvania, New Jersey, Delaware, or Maryland.

(2) Approved Plant Species: Plant species shall be as specified in the Planting Schedule of the Planting Plan or as approved by the CT DOT OEP.

Construction Methods:

(1) Planting Season: All plant material is to be planted in the Tidal Wetland Mitigation Area from April 15th to June 15th (inclusive).

All shrubs within the Wetland Mitigation Area(s) must begin immediately following the final grading and seeding and must be performed and completed within the specified period, or as otherwise directed by the Engineer. Plant locations shall be as generally depicted in the planting plan for the Tidal Wetland Mitigation Area(s), or as modified by the Wetland Scientist from the CT DOT OEP.

(2) Excavation: Planting holes or pits within the Tidal Wetland Mitigation Area must be dug manually. Power equipment may only be used for limited areas as approved by the Engineer.

(3) Setting Plants: Setting Plants: All planting within the Wetland Mitigation Area(s) shall conform to the following additional requirements:

(a) – Setting of herbaceous stock in Wetland Areas: Herbaceous stock shall be planted within planting cells, or clusters, such that individual plants of the same species are grouped together within each cell, at the spacings directed by a member of the CT DOT OEP. All plants shall be set manually. The placement of the cells shall be identified in the field and approved by a member of the CT DOT OEP.

During planting, a member of the CT DOT OEP may relocate up to 50% of the planting cells, from the locations identified in the field or shown on the plans, if as-built site conditions would pose an unreasonable threat to the survival of plantings installed according to the mitigation plan. The planting cells shall be relocated to locations with suitable hydrology and soils and where appropriate structural context with other planting cells can be maintained. The term planting cells means the discrete clusters of plants shown on the approved planting plan. If plant species are not planted in discrete clusters, the planting cell is the entire mitigation site.

(b) – Setting of Shrub Plants in the Wetland Area: All shrub plants in the Tidal Wetland Mitigation Area shall be set as to be level with the microtopography of that immediate area. Shrubs will be irregularly placed within a planting cell, at a minimum spacing specified in the Planting Schedule. For each species, the number of plants shall be as indicated in the Planting Schedule.

(4) Fertilizing: Do not fertilize plantings within the Tidal Wetland Mitigation Area(s).

(5) Guying and Staking: The guying and staking requirement does not apply to plantings within the Tidal Wetland Mitigation Area; do not guy or stake shrubs in wetland mitigation areas.

(6) Mulching: Do not mulch plantings within the Tidal Wetland Mitigation Area(s).

(7) Establishment Period: The Contractor shall replace all dead shrubs within the Tidal Wetland Mitigation Area at the recommendation of the Wetlands Scientist from the CT DOT OEP within one year of planting.

(8) Control of Invasive Species: The Contractor shall control the presence of invasive species within the Tidal Wetland Mitigation Area as follows:

(a) Year 1: In June of year 1 a qualified wetland scientist shall inspect the wetland mitigation site for the presence of invasive species including, but not limited to phragmites, purple

loosetrife, autumn olive, Multiflora rose, Morrow's and Tartarian honeysuckle and reed canary grass. If such species are found, the Contractor must use mechanical methods for removal of all invasive plants from within the Tidal Wetland Mitigation Area, including all roots.

If a member of the CT DOT OEP determines that the mechanical removal methods have been unsuccessful, the Contractor shall employ a licensed herbicide applicator to treat these individual plants with glyphosphate-based herbicide or other approved equivalent to control and/or eliminate such species from the mitigation area. The herbicide Roundup™ shall not be used in or near wetlands because the surfactant in Roundup™ is believed to harm wetland invertebrates. Instead, Rodeo™ or other appropriate options shall be used if required.

Method of Measurement:

The quantity for which payment will be made is the number of shrubs counted in place, planted, and accepted, as shown on the Wetland Mitigation Planting Plan Schedule. Measurement areas for planting shall be assumed as follows: 0.75 square meters (S.M.) for shrubs.

Basis of Payment:

Payment for this work will be made at the contract unit price per square meter for "Furnishing, Planting and Mulching Trees, Shrubs, Vines and Ground Cover Plants" of pit excavation of each shrub completed and accepted in place, which price shall include all materials, equipment, tools, labor, transportation, operations, and all work incidental thereto. No compensation shall be paid for replacement shrub plants required within one year of planting and as determined by the CT DOT OEP after inspection of the first year of growth and survival.

Pay Item	Pay Unit
Furnishing, Planting and Mulching Trees, Shrubs, Vines and Ground Cover Plants	S.M.

Monitoring Report

DOT OEP staff or their consultant shall prepare an annual report for the monitoring of the creation/mitigation areas on the eastern and western shores of the river. Such monitoring report will be submitted no later than December 15th of any year for the first two growing seasons following the completion of this work, which shall provide, at a minimum, the following information:

1) summary of the problems needing immediate attention (e.g., problems with hydrology, invasive species, erosion, and loss of herbivory, etc.);
2) the location and source of all plant material used to complete the mitigation work,
3) dates on which work at the mitigation site began and ended;
4) description of monitoring inspections that occurred since the last report;
5) remedial actions taken during the monitoring year, such as: removing debris, replanting, controlling invasive plant species, applying additional topsoil or soil amendments, adjusting hydrology;
6) visual estimates of percent cover of tidal wetland grasses established and percent cover of invasive species in the mitigation area;
7) percent survival of tidal wetland plantings;
8) plan for removal of invasive plant species;
9) status and condition of all erosion control measures within the mitigation area;
10) observations or fish and wildlife using the site;
11) general health and vigor of the surviving plants;
12) remedial measures recommended to achieve or maintain the proposed functions and values of the mitigation site.

The monitoring reports shall also include as applicable:

- Appendix A -a copy of the permit's mitigation special conditions and summary of the mitigation goals,
- Appendix B -an as-built planting plan showing the location and extent of the proposed planting communities (e.g., planting zones), species planted, the location of the high tide line, mean high water line, and mean low water line, and the location of any erosion and sedimentation control devices;
- Appendix C- representative photographs of the mitigation site taken from the same location for each monitoring event.
- ACOE Project Overview and Self-Certification Forms

Maintenance Report

DOT OEP staff or their consultant shall for a minimum of two (2) years following completion of the creation/mitigation areas conduct the following maintenance procedures:

1) if applicable, remove all invasive plant species within six (6) meters of the mitigation planting areas;

2) remove any construction debris such as garbage or excessive decayed plant material from the mitigation area;
3) replace dead or missing plants which have not already been compensated for by a suitable volunteer species;
4) repair or establishment of erosion control measures.

DOT OEP staff or their consultant shall submit to the Commissioner on CTDEP and the ACOE no later than December 15th of any year documentation stating that indicates that such work has been completed.

ASSESSMENT PLAN

A post-construction assessment of the condition of the mitigation site(s) shall be performed following the second growing season after completion of the mitigation site(s) construction, or by the end of the monitoring period, whichever is later. "Growing season" in this context begins no later than May 31st. To ensure objectivity, the person(s) who prepared the annual monitoring reports shall not perform this assessment without written approval from the Corps. The assessment report shall be submitted to the Corps by December 15 of the year the assessment is conducted; this will coincide with the year of the final monitoring report, so it is acceptable to include both the final monitoring report and assessment in the same document.

The post-construction assessment shall include the four assessment appendices listed below and shall:

- Summarize the original or modified mitigation goals and discuss the level of attainment of these goals at each mitigation site.
- Describe significant problems and solutions during construction and maintenance (monitoring) of the mitigation site(s).
- Identify agency procedures or policies that encumbered implementation of the mitigation plan. Specifically note procedures or policies that contributed to less success or less effectiveness than anticipated in the mitigation plan.
- Recommend measures to improve the efficiency, reduce the cost, or improve the effectiveness of similar projects in the future.

ASSESSMENT APPENDICES:

Appendix A -- Summary of the results of a functions and values assessment of the mitigation site(s), using the same methodology used to determine the functions and values of the impacted wetlands.

Appendix B -- Calculation of the area of wetlands in each mitigation site using the 1987 Corps Wetlands Delineation Manual and approved regional supplements. Supporting documents shall include (1) a scaled drawing showing the wetland boundaries and representative transects and (2) datasheets for corresponding data points along each transect.

Appendix C -- Comparison of the area and extent of delineated constructed wetlands (from Appendix B) with the area and extent of created wetlands proposed in the mitigation plan. This comparison shall be made on a scaled drawing or as an overlay on the as-built plan. This plan shall also show the major vegetation community types.

Appendix D -- Photos of each mitigation site taken from the same locations as the monitoring photos, including photos of vernal pools, if applicable.